LOW PRIORITY DSF'd 1983

ChemRisk/Shonka Research Associates, Inc., Document Request Form

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(This section to be completed by subcontractor requesting document)

J. Lamb / 1034A

Requestor / Document Center (is requested to provide the following document)

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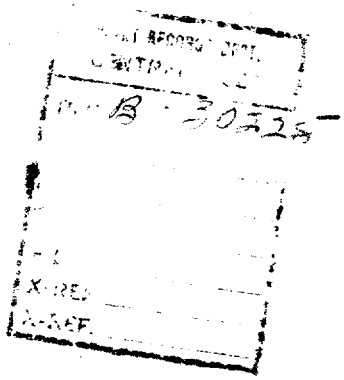
REPORT NO.
KZ 5376

WEEKLY OPERATING REPORT

WEEK ENDING OCTOBER 22, 1944



CARBIDE AND CARBON CHEMICALS CORPORATION
OAK RIDGE, TENNESSEE PLANT WCK

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Carbide and Carbon Chemicals Corporation
Oak Ridge, Tennessee Plant WCX

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[redacted]

POWER HOUSE

Gross Electrical Generation 9,208,000 kw hrs.

Breakdown of Electrical Generation

Station Use	10.6%
To TVA	66.2%
To X-10	3.0%
To S-50	1.0%
To K-25	19.2%
Standby — Energy from TVA	0 kw hr.

Steam Generation 89,280,000 lbs.

Breakdown of Steam Generation

For Electrical Load	91.8%
To S-50	8.2%

Fuel Consumption

Coal			4,696.1 tons
Oil	7,048 gallons	=	42.3 tons
Total Coal			4,738.4 tons

Fuel Received

Coal	162 cars	=	8,873 tons
Oil			6,150 gal.

Fuel on Hand, 12:01 AM, October 23, 1944

Coal	133,693 tons
Oil	24,400 gal.

Overall Boiler Efficiency	86.7%
Overall Station Efficiency	25.6%

No. 2 boiler tubes were made tight and the hydrostatic test was satisfactory. Station load was transferred from No. 1 boiler to No. 2 boiler on October 20th, at which No. 1 boiler was shut down.

The No. 7 Unit was started up and put on the line for the first time on October 20th.

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POWER HOUSE

Gross Electrical Generation — 9,208,000 Kw hrs.

Breakdown - Electrical Generation

Station Use	
To TVA	10.0%
To K-10	66.2%
To K-25	3.0%
To K-27	1.0%
To K-29	19.2%

Standby — Energy from TVA — 0 Kw hr.

Steam Generation — 89,280,000 lbs.

Breakdown of Steam Generation

For Electrical Load	91.8%
To S-50	8.2%

Fuel Consumption

Coal		4,696.1 tons
Oil	7,048 gallons =	42.3 tons
Total Coal		4,738.4 tons

Fuel Received

Coal	162 cars =	8,872 tons
Oil		6,150 gal.

Fuel on Hand, 12:01 AM, October 23, 1944

Coal	
Oil	

Overall Boiler Efficiency	86.7%
Overall Station Efficiency	25.8%

No. 2 boiler tubes were made tight and the hydrostat
factory. Station load was transferred from No. 1 boiler to No. 2
20th, at which No. 1 boiler was shut down.

The No. 7 Unit was started up and put on the line
on October 20th.

POWER HOUSE (Cont'd)

The No. 8 unit is being run with stator winding short circuited for dry out by Westinghouse.

Three leaks developed in the 8 inch high pressure condensate return from S-50, making it necessary to arrange a shut down of S-50 on October 23rd for repairs.

New maximum station records were established:

750,000 lb. per hour steam from 11:10 to 11:25 PM, October 22;
76,000 kw., 1:00 PM, October 21.

Steam to S-50 will be limited to 560,000 pounds per hour (capacity of flash tanks) until present facilities can be checked further.

Personnel Status

Power House

New Hires	8
Terminations	3
Active Personnel, October 22	257

Electrical System Operation

New Hires	1
Terminations	1
Active Personnel, October 22	32

PROCESS

54 Stage Operations

During the entire week, Building 303-2 was in the hands of construction contractors for major revision and completion work.

With the exception of some foremen and technical men, all Carbide operating men from Building 303-2 were assigned to study and training work in Building 302-3 for the duration of construction activity in Building 303-2. Foremen and technical men followed construction in Building 303-2 in an effort to expedite the work and gain information which would prove useful in returning the building to an operable condition.

A DeLaval oil centrifuge was delivered to the building on October 21, 1944. A factory representative is expected at the plant on October 24th to direct the installation and initial operation of this equipment.

During the idle time in this building, a concerted effort was made to remove from the payroll those men who, in the opinion of all foremen, were unsuited to operations work. Some of these men have been released and some transferred to more suitable assignments. Some reclassifications correcting underestimations of ability were made.

Case I Operations

During the past week 16,000 pounds of C-816 and 3,500 pounds of C-716 were transferred from Warehouse 0101 to Ford, Bacon, and Davis Conditioning Area for use in their 716 test stand.

Vacuum Testing

Work was progressing in the following cells of Building 302-3: 1, 2, 3, 5, and 7. Seal feed testing and P. G. system testing are both about 90% complete in these cells.

The following cells have been turned over to J. A. Jones following the completion of preliminary testing of the P.G. system, and complete testing of the Seal Feed system: 4, 6, 8, 9, and 10.

Testing was progressing in the following pipe galleries: 310-1, 310-2, 310-3. Work had just begun in 310-1 and 310-3, but is about 70% complete in 310-2. Leaking valves have been removed from the 302-2 gallery, and vacuum test equipment is still in place for testing the replacement valves when they are installed. Work in 302-2 is about 95% complete.

C-216 Operations

No. 1 and 2 cells were operating the past week at an approximate load of 1500 amps. No. 3 cell was put into operation on October 18th. This is the maximum number of cells that have been in operation at any one time, and has raised the daily production of the system up to approximately 100 pounds of C-216 per day. Indications still are that these cells can not be operated above 1500 amps. without a fairly rapid rise in the anode voltage.

On Thursday, the cells were shut down in order to install an acid seal in both the feed and vent lines. The acid in the seal pot for the main line was adjusted to break at 3" of water and the one on the vent line was adjusted to break at 2" of water.

The C-216 supplied to Ford, Bacon, and Davis has been less than 10 pounds per day. An average of approximately 60 pounds has been fed to the disposal plant. In addition to this, one portable cylinder has been pressured up to 30 pounds gauge and sent to X-12. This makes the second cylinder that has been sent out of this plant, the other one going to the Fercleve Company.

C-74 Operations

The quantity of L-28 used during the past week has dropped down to an average of approximately 5500 gallons per day. This is a drop of approximately 1500 gallons per day, and as a result, a number of tank cars could not be unloaded at the time they were delivered. By the end of the week, this situation had been fairly well taken care of.

PROCESS (Cont'd)
G-74 Operations (Cont'd)

A considerable amount of difficulty has been experienced with the meters on the discharge side of the L-28 unloading pump. A third meter has been installed during the past week. Flow meters have also been installed on the G-74 lines going to the conditioning building and the process area, as well as an alarm to indicate a pressure drop in our main header line.

A considerable amount of trouble has also been experienced with the steam supply. However, in no case did the interruptions last long enough to more than deplete the pressure in the surge tanks.

A general survey was started to determine the probable future requirements of L-28 in the process and conditioning areas.

C-216 Disposal

UF4

Several weeks ago, Hooker inadvertently emptied a full storage tank of C-216 to the disposal tower in 15 minutes. No data were obtained at the time, but indications were that the scrubbing tower was able to handle this sudden surge with ease. For this reason, it was decided to conduct a test to obtain performance data on the scrubbing tower while full pressure of the tank was forcing C-216 through a 0.6" orifice to the tower. Forty eight pounds of C-216 were fed to the tower in 9 minutes during the first run and ninety six pounds of C-216 were fed to it in twenty four minutes during the second run.

The tests were very satisfactory in that no pressure surge was noticed, nor was more than 5 ppm of C-216 detectible in the exit gases from the tower. This definitely demonstrates that the vent lines on the rupture discs on the C-216 storage tanks could be connected directly to the storage tower.

During the remainder of the week, 60 pounds per day of C-216 were fed from the storage tanks directly to the tower. This is a long term test to determine whether or not the vent line feeds into the tower will plug up with salts and also to get some information of the efficiencies in the reaction and settling tanks.

Special Projects

Additional runs were made on the experimental caustic scrubbing tower. Experimental data showed that the scrubber was not as efficient as was first indicated since approximately 400 ppm of CF_2 were found in the exit gas.

At a meeting at which representatives of Kellex and Carbide were present, it was decided to pipe the waste C-216 from the process area to the present disposal tower, thus eliminating the necessity of any type of portable disposal unit.

Since the experimental scrubbing tower was already set up, a few runs were made using water as the scrubbing material. Laboratory results from these runs are not as yet available.

PROCESS (Cont'd)

Utilities and Services Operations

Make up water daily average 1,049,433 gallons. A loop average daily pumpage 18,064,666 gallons. B loop average daily pumpage - no flow. Fire water average daily pumpage 229,714 gallons.

The sanitary water plant and the sewage disposal plant are being operated by the J. A. Jones Construction Company.

Building 1201 has been accepted by Carbide and Carbon Chemicals Corporation with exceptions. Air from this plant is used primarily for construction purposes.

1500 Plant has been supplying steam throughout the K-25 Area at an average rate of approximately 100,000 pounds per hour. Coal is being received at a satisfactory rate. Condensate has not been received in quantities large enough to make for the best plant operation. Control mechanisms are being adjusted. Feed water treatment is being brought within the range of design and operation in general is being improved.

CONDITIONING

Cleaning Operation

Less than the normal amount of pipe was received from Midwest and production was under the usual schedule. Sixteen C-216 monel drums were received and started through the cleaning line. The valve assemblies will be made and installed in the C&CCC machine shop. This shop will also make any necessary repairs as a result of leak testing the assembled drums.

Special equipment cleaned included coolers, copper tubing, AC and intersectional coolers.

Hot acid treatment has been temporarily held up awaiting confirmation by Kellex.

AC Blower Conditioning

	During Week	Total to Date
Blowers received	85	1,039
Blowers conditioned	66	928
Blowers rejected	4	22

Rejections were as follows:

Blower 92A-1497, C2AD-945 - Impeller seal stuck. Sent to shop and 0.01" machined off casing baffle rings.
92B-708, C1AS-156 - Impeller rubbed casing. Sent to shop.
92B-647, C1AS-95 - Leak rate high.
92A-67, C2AD-67 - Leak rate high (Venturi plug loose).

An average of about 5 conditioning stands were run.

Converter Conditioning

Three conditioning furnaces were available during the week. The fourth was undergoing leak test.

Ford, Bacon, & Davis are training operators for additional furnaces.

Our men are covering the conditioning operation, making their own readings and calculations.

Messrs. Paxton and Dean provide the procedure and supervise the operation.

	During Week	Total to Date
Converters received	20	44
Converters conditioned	8	15 (2 shipped to Chrysler)
Converters rejected	0	0

Converter Running Tests

The gas system was completed and tested during the week. The coolant storage tank was supplied with 1200 gallons of 816 under 5# G-74 pressure, 90 gallons of 716, and 562# of Freon 22 were added to system. Approximately 10 gallons of 816 were lost during the 4-12 shift due to a gasket failure in flange on 4" line leading to No. 4 stand. Loss of 716 due to leaky connections appeared to be about a gallon.

The York refrigerating unit was started and tested on October 20th.

No. 5 stand was operated for several hours with a dummy converter in position using G-74 at about .70# absolute, or about operating pressure.

The G-74 was removed and 716 allowed to circulate for a short period.

WORKS LABORATORY

The construction on the laboratories is progressing satisfactorily. The laboratory furniture is being installed in D laboratory and the auxiliary equipment for the building will be completed in about two weeks. It is expected that the building will be ready for complete occupancy by the 15th of November. The side walls are being erected on laboratory B and the forming is progressing on the floor slab for laboratory C. The basement has been excavated for the A wing of the laboratory and forming operations are underway.

Physical Chemistry Laboratory

There are approximately 10 people working at S-50 setting up equipment in the space provided by the Foreleve Corporation. The building being provided for the physical chemistry group is not yet completed but one amplifier is being installed in the counter room and will be operated although the air conditioning for this particular room has not been installed as yet. The chemical laboratory in their building will probably not be completed for from one week to ten days.

WORKS LABORATORY (Cont'd)
Physical Chemistry Laboratory (Cont'd)

Under the present set-up, the chemical equipment for carrying out the sample preparation is totally inadequate and it will not be possible to operate satisfactorily until the new chemical laboratory is completed. One counter is being operated but it is not in a suitable location due to the fact that there is a great deal of dust and dirt around and also electrical interference on the counters so that the results may be somewhat questionable until the completed counter room is available. Samples are being started at the present time, but no samples have been carried to final complete results. In general, the progress on the Fercleve set-up is quite satisfactory and smooth operation can be expected in the near future.

Physics Laboratory

At the present time, three machines are set up in the physics laboratory provided by the Fercleve Corporation. Only one of these machines is in operating condition and the actual running of samples has only just started so that no actual rate of production of samples can be given as yet. The facilities are set up to handle three machines adequately and the second two machines are being put in condition by the maintenance personnel. The machines are being used at the present time for training Carbide personnel rather than Fercleve personnel. Thirty people are on the Carbide payroll at present in the physics laboratory group.

Chemical Laboratory

The chemical laboratory is at present carrying out several types of regular routine analyses. The dew point of the G-74 is checked daily at several locations. The concentration of trichlorethylene in the air near the Blakiston degreaser is checked daily at five locations. Control analyses are being run on the water at the auxiliary steam plant; coal analyses will be run on the coal for this plant as soon as the equipment is available. Water samples are taken periodically from Poplar Creek from the flume to the recirculating water plant, and from the settling pond of the acid disposal plant in order to check the composition of the suspended solids in these various locations. Some oil samples are being run for the maintenance department although this particular type of control work is as yet of only slight significance. Approximately 150 to 200 control samples are run every week, most of these being either on water, oil, or G-74.

At the present time, very little work is being done on the coded materials. Development work is under way on better methods for checking some of these analyses and also on means for determining the character of the coded material in the process area. Equipment is being set up to determine the composition of G-74 and 716 mixtures for use with the 54 stage plant. One group is working at the present time developing standard methods for industrial hygiene analysis where the use of coded materials is involved. Very little work has actually been done along these lines and most of the methods will have to be developed by our group here.

Equipment is being assembled for carrying out the specification acceptance checks on the various coded materials being manufactured at Wilmington and at Cleveland. It is hoped that these pieces of apparatus will be in operation within the next three weeks so that we can relieve Kellex of their responsibility in this matter. Work is under way on the development of more satisfactory methods of 216 analysis, particularly with the view of making rapid field analyses in order to follow the concentration of 216 while units are being conditioned.

WORKS LABORATORY (Cont'd)
Chemical Laboratory (Cont'd)

Plans are under way for setting up the various pieces of large permanent equipment which will be installed in the laboratory so that metallurgical service and and spectrographic service can be given very soon after the laboratory is completed. Plans are under way to carry out some specific corrosion tests and to study some welding joints of various types in order to ascertain what can be expected in the way of corrosion on these particular welded joints in the plant. Particular attention will be paid to the type of joints being used in the 100 section.

In approximately one month, the laboratory will be equipped to handle any problems which may arise in connection with the operation of the plant.

MAINTENANCE DEPARTMENT

The facilities of the maintenance department are being used in ever extending portions of plant.

Process maintenance is working with the leak test department on repairs to new construction. The machine shop is making vacuum tight covers for stage pump seals. The welding department is operating on three shifts a welding school to train welders in various specific jobs. The carpenter shop is making cabinets and tables for use by the various departments of the plant. General maintenance is being done in the steam plant and water circulating building.

The instrument department is working with Kellex and the contractors on procedures for instrument testing. Training courses in the various sections of the instrument department are being conducted.

Total orders on hand beginning of week	934
Total orders received during week	976
Total orders completed during week	858
Total orders on hand end of week	1,052

INDUSTRIAL RELATIONS

Employment Department

During the week Mr. Marcone visited the various employment offices throughout the state. The number of skilled craftsmen available is decreasing and it appears that it will be much harder to obtain employees of this type in the future.

Assignment of office space in the Stone and Webster Building at the Elza Gate has been received from the U.S.E.D., and the new arrangement will take care of our needs at this location very satisfactorily.

The owners of the Knoxville office have notified us that they will want the use of the entire building as of December 1, 1944. As there are very few places available in Knoxville suitable for an employment office, it would be preferable to retain these offices, inasmuch as this address has been pretty well established with people throughout the state.

During the period of October 1 and October 15, 546 people were hired.

With the increase in the number of new hires, the medical department now needs some of the room which was being used temporarily for employment department functions. It will, therefore, be necessary to obtain some other space for employees who have been located in this department.

Training

Five rooms in the Wheat School have been allotted for training purposes. The classes are being conducted at this location at the present time.

Two groups of employees are now training for mine rescue work under government trainers. Due to increase in the number of guards, it has been necessary to take on this work in the building formerly occupied by the Edenfield Electric Company.

The foremen and supervisors' training program for guards and firemen is progressing satisfactorily.

Safety

There were no lost-time accidents during the week. There were 24 injuries to employees who required first aid treatment.

Labor Relations

A formal grievance procedure has been prepared and submitted for approval. If approved, the plan will be explained to the supervisors at their conference and training classes.

There has been an increase in the number of garnishments of employees' wages and salary, and each case is being handled individually with the employee. The employees have been very cooperative and in most cases the problem has been settled satisfactorily.

Employees Services

There has been a number of complaints by the employees living in our barracks relative to the service and many minor items which will make the barracks livable. This matter has been reported a number of times to the J. A. Jones Company, who have control of the barracks, and to date nothing has been done. Mr. Murphy employees services supervisor, recommends that these barracks be put under the direct supervision of his department for operation and maintenance.

Medical

Summary of Treatments	October 1-8 Inclusive	October 9-15 Inclusive	October 16-22 Inclusive
1. Industrial Accidents			
New Cases	34	29	31
Retreatments	37	43	68
2. Industrial Illness			
New Cases	0	1	0
Retreatments	0	3	0

INDUSTRIAL RELATIONS (Cont'd)
Medical (Cont'd)

Summary of Treatments	October 1-18 Inclusive	October 9-15 Inclusive	October 16-22 Inclusive
3. Welfare Accidents			
New Cases	16	14	14
Retreatments	18	3	4
4. Welfare Illness			
New Cases	122	136	121
Retreatments	86	64	83
5. Other (Vaccines, etc.)			
New Cases	50	66	59
Retreatments	16	7	13
Sub Total	379	366	393
Summary of Examinations			
6. Pre-employment accepted	283	259	301
7. Pre-employment rejected	1	0	0
8. Pre-employment reclassified	6	2	1
9. Re-hire	10	7	4
10. Industrial			
11. Termination	67	74	82
12. Other complete examinations			
13. Partial examinations			
Sub Total	367	340	388
Patient-visits by employees of other operators			
14. U.S.E.D.	2	1	0
15. F.B.&D.	0	0	0
16. Kellex	7	0	2
17. Hooker	1	0	0
18. Ferolevo	8	2	10
Sub Total	18	3	12
Treated at S-50 Dispensary			
19. Patients treated at S-50	60	54	67
TOTAL	824	763	860

Personnel	Average Number on Payroll	New Hires	Terminated
A. Office	543	29	10
B. Plant Operation	297	3	8
C. Plant Maintenance	706	34	17
D. Laboratory	63	9	0
E. All Others	1,673	186	70
TOTAL	3,282	261	105

SECURITY

Personnel	Quota	Terminated
Office of Assistant Superintendent, Security	3	0
Investigation & Verification Office	41	0
Guard Force	534	40
Fire Force	104	4
TOTAL	682	44

Efforts made in the recruiting of guards have caused two classes to be established for their instruction. This week there are 88 such recruits.

Fencing of the power house area was practically completed which will permit it to be designated as a restricted area. This will not save any in the number of guards as first thought possible, because of the number of gates placed in the fence which have still to be manned.

New guard posts established in Buildings 310-1, 2, and 3 and Buildings 302-1, 2, 4, and 5. Post had already been established in Building 302-3; posts also were established in basements in Buildings 302 and 310. Men were placed on these posts to prevent unauthorized persons in buildings and to protect from damage or theft any of the equipment therein.

A new badge system is being prepared with view to having "photo badge exchange" system installed.

Recommendations were made for erection of badge exchange portals at power house area and laboratory area when completed.

The uniforms of the guards were changed from summer khaki to grey West Point style.

There has been a noticeable increase in efficiency of guards and firemen, possibly because of permitted increase of 5¢ an hour in salary after 2 months of efficient service.

Plant for installation of fire alarm system in buildings and streets have been completed.

H. D. Kinsey
General Superintendent

LOW PRIORITY

2483

ChemRisk/Shonka Research Associates, Inc., Document Request Form

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(This section to be completed by subcontractor requesting document)

J. Lamb / 1034A

Requestor *Document Center (is requested to provide the following document)*

Date of request 8/18/95 *Expected receipt of document* 10/20/95

Document number K2-5377 *Date of document* 10/29/44

Title and author (if document is unnumbered)

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(This section to be completed by ChemRisk/Shonka Research Associates, Inc.)

Date document received _____

Signature _____

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WEEKLY OPERATING REPORT

WEEK ENDING OCTOBER 29, 1944

REPORT NO.
KZ 5377

CARBIDE AND CARBON CHEMICALS CORPORATION
OAK RIDGE, TENNESSEE PLANT NO. X

UNCLASSIFIED

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Carbide and Carbon Chemicals Corporation
Oak Ridge, Tennessee Plant WCX

POWER HOUSE

Gross Electrical Generation 9,980,000 kw hrs.

Breakdown of Electrical Generation

Station Use	10.8%
To TVA	63.6%
To X-10	3.5%
To S-50	1.1%
To K-25	21.0%

Standby — Energy from TVA 0 kw hr.

98,180,000 lbs.

Steam Generation

Breakdown of Steam Generation

For Electrical Load	87.8%
To S-50	12.2%

Fuel Consumption

Coal		5,320.6 tons
Oil	0 gallons	0 tons
Total Coal		5,320.6 tons

Fuel Received

Coal	183 cars	10,274.4 tons
Oil		13,405 gallons

Fuel on Hand, 12:01 AM, October 30, 1944

Coal	138,811.9 tons
Oil	37,805 gallons

Overall Boiler Efficiency	88.7%
Overall Station Efficiency	23.3%
Station Efficiency, Electrical Generation Only	26.4%

No. 8 Unit (25,000 kw Westinghouse) was started up and put on the line for the first time on October 26th.

POWER HOUSE (Cont'd)

No. 2 Unit (25,000 kw Allis-Chalmers) was started up and put on the line for the first time on October 28th.

A longitudinal rip, about 60 feet long, developed in No. 1 Coal Conveyor Belt. It was caused by the sharp point on a large lump of coal (over 30 inches long). The belt was repaired by power house maintenance and ready for service in six hours. Recent coal shipments from certain mines have had considerable amounts of large lumps. The conveyor system is designed to handle run of mine coal, but not larger than 20 inches. The coal shipments were referred to the purchasing department.

A working committee composed of representatives of Fercleve, Kellex, Army, and Carbide met on October 27th to coordinate S-50 design and operations.

Mr. E. C. Bollinger reported for duty as Boiler Room Engineer on October 24th, relieving Mr. Riley of that duty.

The canteen (Carbide operated) opened for business on October 27th.

Personnel Status

Power House

New Hires	6
Terminations	3
Active Personnel, October 29th.	260

Electrical System Operation

New Hires	0
Terminations	0
Active Personnel, October 29th.	32

PROCESS

54 Stage Operations

Following the withdrawal of J. A. Jones workers from Building 303-2 on Saturday, October 21, 1944, Carbide operators and maintenance men proceeded to prepare the equipment for operations. Several jobs not completed by Jones were finished by Carbide. Completion and repair work on the lubricating oil system was extensive and accounted for considerable loss of time.

On Monday, October 23rd, the lubricating oil system was put in operation, the cell evacuation system repaired and operated, and seven of nine cells placed in operation. Cells 8 and 9 were delayed for blower maintenance. They were started on October 27, 1944. Cell 7 was started but forced down on the same day due to a faulty seal. On October 28th, Cells 2, 3, 7, and 10 were transferred to the instrument department for completion of instrument testing and calibrating.

PROCESS (Cont'd)

54 Stage Operations (Cont'd)

The entire building lubricating oil system was operated long enough to indicate that the revisions made by construction and maintenance have corrected most of the ills previously encountered. A thorough study of this system is continuing.

The DeLaval oil centrifuge has been operated successfully. Mr. H. L. Barnett has agreed to operate this equipment in the future.

The Pacific Pump representative, Mr. P. H. Bowen, is continuing to work with process and maintenance men in an effort to correct difficulties encountered with coolant circulating pumps.

The mobile service equipment has been repaired and partially operated. Further tests are continuing. Arrangements are being made to operate Cell 3 on C-716 as soon as instrument men have completed their work. It is expected this will be the case before the end of the week.

Particular stress is still being placed on the training of operators, foremen, and technical men. A new staff of instrument instructors is expected to take over this phase of training in a week or two.

Case I Operations

The following material was received by the process department during the week of October 22-29, 1944:

		Date Received	Number of Drums	
C-616		10-25-44	30	
C-616		10-27-44	30	
	Total			60
C-816-1		10-24-44	18	
C-816-2		10-23-44	99	
	Total			117

Vacuum Testing

Partial preliminary acceptance (acceptance with mock-ups and some stage pumps) has been given all ten cells in K-302-3. Cell 302-3, 10 is now under test with filters and stage pumps installed. Since the K302-3 pipe gallery is completely tested, the building is 65% tested. The following pipe galleries are now under test, and their approximate percentage completion is:

K-302-1	15%
K-302-2	95%
K-310-1	30%
K-310-2	80%
K-310-3	80%

[redacted]

PROCESS (Cont'd)

Vacuum Testing (Cont'd)

Vacuum testing equipment is being moved into place for testing the pipe gallery of K-302-5, the last of the Case I galleries to be tested. K-302-4 gallery has been 98% complete since October 11th; two valves in it must be checked when the K-302-4 cells are tested.

C-216 Operations

On 10-24-44 started running #2 generator on nickel anodes. Steel ells on both H_2 lines to HF absorber were replaced with lead ells. #2 started on carbon anodes but cathode voltage dropped to .1 volt and it was found that steel washers on cathode electrodes had been used instead of fiber causing a short from diaphragm to cathode.

The consumption of C-216 at points other than the disposal plant, where 60 pounds per day is being used directly from the storage, continues to be small.

C-74 Operations

Flow meters to process and conditioning were put into operation. On 10-25-44 the consumption of C-74 jumped from 275 cu. ft./min to 500 cu. ft./min. Jones' coordinator was contacted but the cause of the increase could not be found. Maintenance repaired the steam trap on the vaporizer heat exchanger.

Detailed drawings for foundation, installation, and piping of 880 cu. ft. oxygen warm converter next to building 1408 were prepared. The foundation and floor plans have been issued to Mr. Kornman of Carbide for construction work. Plans are that this work will start immediately. The 880 cu. ft. converter, complete, has been received from the Linde Air Company and is being stored in Building 1408.

C-216 Disposal

The salt content in system increased from 1400 mg/l to 3300 mg/l as a result of tower tests using a full storage tank of C-216. Lime feed was increased from 4 lbs./hr. to 15 lbs./hr. and the salt content is going down at a rate of about 200 mg/l per day.

Flash Conditioning

Preliminary steps have been taken to organize the flash conditioning squadron. This group of men is now familiarizing themselves with operations in the process area, conditioning as conducted in the furnace room in the conditioning building, and those reports on flash conditioning that are now available.

[redacted]

PROCESS (Cont'd)

Utilities and Services Operations

Section 800 - The average daily pumpage at the recirculating water plant -

Make-Up Water	912,437	gallons
A-Loop	17,216,986	gallons
B-Loop		No flow
Fire Water	167,714	gallons

Section 1200 - The load in this section is relatively light, and is being handled with two compressors. The No. 1 and No. 2 Ingersoll-Rand compressors have developed slight knocks, the No. 2 compressor being the more serious. The factory representative of Ingersoll-Rand is to check these compressors and repair same. No. 1 and No. 2 compressors are not being used until proper repairs are made.

Section 1500 - The load of the Steam Plant has progressively increased throughout the last week from 60,000 to 120,000 pounds of steam per hour. The latter figure is the capacity rating of the plant.

Condensate return has not increased proportionately, since its maximum has been in the order of 15,000 pounds per hour.

Make-up water has increased to our treating capacity of 60,000 pounds per hour. Treatment of this volume is satisfactory.

Coal in storage is now estimated at approximately 45 cars.

An adequate number of men has been hired to operate this section satisfactorily.

CONDITIONING

Cleaning Operation

Cleaning of Ni plate pipe using the hot acid treatment was approved October 24, 1944. Both the old and new methods were employed, while one of the large acid tanks formerly used for ordinary steel pipe was being equipped with steam coils. After the coil installation it will be used for hot acid.

Production of clean pipe has increased appreciably with the use of the new method.

Leak Testing

Operation in this area was normal, and production kept pace with the cleaning operation.

CONDITIONING (Cont'd)

AC Blower Conditioning

	During Week	Total to Date
Blowers received	94	1133
Blowers conditioned	102	1030
Blowers rejected	7	29

92B-736 - impeller noisy. Impeller replaced.
92B-753 - excessive leakage. Casing gasket replaced.
92A-123 - excessive impeller seal leakage. Sent to shop.
92A-163 - excessive impeller seal leakage. Sent to shop.
92A-134 - impeller rubbed casing. Repaired in shop.
92B-738 - excessive impeller seal leakage. Repaired in shop.
92B-737 - excessive impeller seal leakage. Repaired in shop.

Specifications for impeller seal leakage were sent by Kellex. The leakage of impeller seals rejected this week was in excess of the new specification - 56.6 cc/min.

Three of the rejected blowers were repaired in the shop by honing the impeller hub and replacing the impeller seal gasket. They were returned to the conditioning stands. Leakage tests were made, and while improvement was made in the leakage, results on none of the pumps met specifications.

It has been recommended that pressure be applied to the impeller seal in the shop after the blower casing has been removed. It is possible that excessive leakage may be detected by ear or by bubble test. Visual inspection of the pump with casing removed has not been satisfactory.

Converter Conditioning

	During Week	Total to Date
Converters received	26	70
Converters conditioned	12	27

Six conditioning furnaces were in operating condition at the end of the week. Two were undergoing leak test.

An electric heating element was installed near the outlet of the Elliott pump on the circulating system of No. A-13 furnace.

The conditioning cycle has been shortened to approximately 24 hours.

Two types of mist filters are in trial use in the discharge line of the Stokes pump on No. A-13 furnace. One is a baffle type, the other a combination baffle section and cyclone separator.

Converter Running Test

After leaks were found in both the C-716 and C-816 systems, the systems were drained and the 716 system was vacuum tested. The 816 system is to be both pressure and vacuum tested. This work should be completed early next week, and permit the operation of one unit.

PHYSICS LABORATORY

Operations

Assay Machines. The Fercleve Laboratory No. 1 started on three shifts on October 16th. The first samples were received from Fercleve on the 21st of October with first results transmitted on the 26th.

Our laboratory now has four assay machines on hand. A and B are being used for Assay determination. They have been in operation for the last five days. Our analysis rate has been more than equal to the rate at which samples have been received from Fercleve to date. The third machine was turned over to us by maintenance. It had too high a resolution for assay purposes but was used for instructional purposes. The fourth machine was received in our laboratory on the 26th of the month and is being installed by maintenance. Up to October 30th, sixty-six samples had been received from Fercleve, twenty-three have been given to Dr. Hurd's group for testing by the counting method, thirty-four have been kept by our laboratory of which eighteen have had analyses run, the other sixteen were bad. The majority of the sixteen bad samples were received during the early stages of sampling although continued improvements are expected.

Refining. Difficulties have been encountered with the refining equipment and a new one is being built. One of the major troubles is the procurement of sweaton fittings, valves, and unions.

Line Recorder. The line recorder is still being bellowed by Mr. Kandell who is working with Dr. Hier's group in New York. He is continuing to send reports on calibration, etc. A request has been made that he be permitted to remain with that group for a longer period of time and take over the line recorder operation. This will free Mr. Goertzel of Kellex who will then assume responsibility for the construction of six line recorders for Carbide's use.

Administration

Meetings. Our laboratory staff held a meeting on October 17th during which a schedule of handling samples and data in the Fercleve Laboratory was discussed and a definite procedure was set up for the receipt of samples from Fercleve, their routing through the laboratory, and the transmission of results to Fercleve.

There was an impromptu meeting held in the Fercleve Laboratory on October 24th. Mr. Kinsey, Dr. Hull, Mr. Spracklen, and Mr. Rappaport went over the reasons for all machines being held up by maintenance with the result that one was turned over to the laboratory the next morning and a second a day later.

A meeting was held with two General Electric field representatives, Mr. Burroughs and Mr. Feytinger. They asked for clearance to the Fercleve Laboratory so that they might be in close touch with assay machine difficulties. Also, the impossibility of obtaining information from General Electric for the line recorder manual was mentioned. Several short-cuts were suggested and it is hoped that improved liaison has been established.

Personnel Changes

Mr. C. B. Slade of SAM was hired as staff supervisor. Miss Mildred Randolph was hired on October 18th as Trainee "A". Mr. W. Stinson (N.Y. transfer)

PHYSICS LABORATORY (Cont'd)

Personnel Changes (Cont'd)

was requested for work in our laboratory. Miss Nancy Cunningham was transferred October 26th and Mr. S. D. Schiffman, who will fill a position as shift foreman arrived in Oak Ridge. Ensigns McQueen and White are acting as consultants on the assay machine, these men having worked at U. of Virginia and N.R.L. for Dr. Edward Nye. Miss Olga Beck was transferred from the process department on October 16th and will be used as Trainee "A".

Building

Fersleve Laboratory No. 1. Building services are becoming better organized. The air conditioner is working properly, unit heaters are operable, and there is a direct telephone line to the outside. An exhaust for the glass-blowing room is missing. The steam line lacks insulation. An oxygen line is still to be built.

Building C-1004-K. Soil lines were installed, the basement floor slabs poured, basement curbs placed, and forms started for the first floor slab.

CHEMICAL LABORATORY

At the present time, the chemical laboratory is continuing to carry out the same routine analyses reported last week. No additional routine control operations have been started although a large number of oil samples were checked for the transportation department in order to ascertain the S.A.E. numbers of some oil uncovered by transfer. This work is still continuing although enough samples have been run to keep the transportation department supplied with lubricating oil.

Samples of gas were taken from several cylinders which were supposed to be seaford nitrogen but which proved to be hydrogen upon analysis. More cylinders are being supplied in order that their content may be checked; it seems very unlikely that Seaford nitrogen would be available in a government warehouse and it is probable that the gas in the cylinders under question is either oil pumped nitrogen or hydrogen.

Progress on the construction of the laboratory is somewhat slow but it is hoped that two rooms will be completed by next Monday, at which time complete apparatus can be set up for carrying out many of the ASTM tests required throughout the plant. It is probable that the laboratory building will not be completed until well towards the end of November unless the rate of completion speeds up in the future. The furniture has all been delivered and is being erected but due to the fact that there is no experienced furniture erection man in the field, the erection is going ahead very slowly. The equipment required for carrying out the specification check analyses on coded materials is being assembled and those parts which have to be made in the machine shop are being constructed as rapidly as possible. As soon as the laboratory designated for this work is turned over, it should be possible to set up a fair fraction of the equipment and to actually start doing the specification acceptance analyses very soon after the laboratory space is available. No samples have been shipped to K-25 as yet, but samples are expected to arrive in about another week and analyses will be done in the laboratory, particularly with respect to 616, within a very short time.

Equipment is being designed and assembled for extraction of 3' sections of 6" nickel plated pipe in order to determine the exact amount of dirt or smut present on the inside or nickel plated surface of the pipe. This equipment is being constructed

CHEMICAL LABORATORY (Cont'd)

at present and will be set up as soon as possible. The present indications are that the figure of 10 mg per square foot, which has been set by Kellex as the absolute maximum allowable amount of dirt is being exceeded in all of the pipe being passed by the inspectors. If Kellex feels that this figure is the real figure, and that it must be met for satisfactory operations of the plant, then steps will have to be taken to improve the cleaning procedure in order to obtain pipe of this cleanliness. It is the opinion of the laboratory staff that this degree of cleanliness could never be obtained on pipe which is as rough as the pipe being supplied at the present time.

A very satisfactory dew point test device has been constructed during the past week and is being used at present to check the dew point of G-74 in the field. It has been calibrated against known gases and seems to give a very accurate answer; it will be compared with results obtained by the General Electric meter previously used in order to ascertain whether the results obtained have had any real significance.

The calibration of the apparatus for determining the composition of G 74 - 716 mixtures for use with the 54-stage operation has been under way and although not completed, it will be in an operable condition within a very short time.

Work continues on the standard method for industrial hygiene analysis and it is hoped that satisfactory field kits can be constructed in the very near future.

Samples of the various types of brazing and welding rods being used in the 100 section are being obtained for analysis in the laboratory. In discussing the assembly and type of joints being used in that section with Mr. Deck and Mr. Floeke, they agreed that the methods of joining were quite unsatisfactory and that it would be very advisable to have available in the field for maintenance work a good sized supply of monel pipe which could be used to fabricate tees to replace the copper tees being used at present. As soon as the corrosion laboratory is set up, which will be in about two weeks, tests will be started on determining the rate of attack on the fabricated copper tees being used in the 100 section by flowing liquid 616.

At the present time, the demands on the laboratory are exceeding the capacity of the laboratory by quite a large factor in view of the fact that no real facilities are available as yet. However, every attempt is being made to handle the jobs which require the most careful control and ignoring those which are only of interest and which can be allowed to wait until complete facilities are available. It is probable that a shift organization in the laboratory will have to be set up within the next two or three weeks in order to take care of various types of coded material analyses and industrial hygiene analyses in the field.

PHYSICAL CHEMISTRY LABORATORY

With temporary facilities in the physics laboratory at Fercleve, a practice sample was run on October 9th. By October 23rd, routine analyses were started with results being reported to $\pm 3\%$. Present conditions do not permit more accurate analyses. Up to the present time 11 samples have been reported.

Construction of the laboratory is proceeding satisfactorily. The office and the counting rooms have been occupied. Work is proceeding rapidly on air

PHYSICAL CHEMISTRY LABORATORY (Cont'd)

conditioning of the counting room which should be finished by November 1 at the latest. The main laboratory room is almost completed, and it awaits the arrival of sinks and hood blowers which are promised by the end of the week. The supply room is in about the same state of progress.

To this date, 21 Carbide people have been transferred from the S.A.M. laboratory to the S-50 site. Two others have been hired at the site and are being trained. Twelve Fersleve people, including 5 G.I.'s, are being trained.

Shift work was started on counting on the 24th of October. Shift work is now being started on all phases of the method. Practically all the essential equipment has been received from S.A.M. laboratory or has been procured from Carbide and Carbon's laboratory stores. Under present conditions and after having completed a week of training, it should be possible to run approximately 10 samples a day.

MAINTENANCE DEPARTMENT

The employment in the maintenance department October 28th was:

Manual	753
Supervisory	59
Office Personnel	61
Total	873

Total orders on hand beginning of week	1,052
Total orders received during week	1,156
Total orders completed during week	1,219

Absenteeism was 14% during the week.

Instrument testing is being supervised in 302-3 and 303-2. Twelve men from the electronics department are being used at Ferslave Corporation. Two large machines were put in operation and erection started on the fourth machine.

Electrical maintenance is being carried on in buildings in 1000 Section, Buildings 1408, 1501, K-302-3, and K-303-2, 800, 802, garage buildings, guard barracks, and training school.

The machine shop has been making cover plates for A-C pumps, also seal covers for A-C pumps, and doing various work for the laboratory. Several check gauges for the A-C pumps were made for the process maintenance group.

The process maintenance group has installed several converted type G pumps in Building 302-3. Repairs made to lube system on Building 303-2.

The grounds and buildings department has done several maintenance jobs on toilet facilities in various buildings on the area. Janitor service is furnished in the following buildings:

Safety, Hospital, Laundry, Laboratory, Garage, Instrument, Wheat School, Edenfield Electric, 303-2, 302-3, 302-4, and adjacent offices.

40 complete furniture moves made.
165 moves made for property department.

The welding department has continued the welding training course and also worked with the leak detectors on a twenty-four hour schedule in buildings 302-3 and 302-4; also manufactured trucks and carriages for use about the plant.

Employment Department

At the present time, eight recruiters are on recruiting trips. They are looking particularly for radio men, men for instrument department, electrical mechanics, glassblowers, and trainees.

The number of people interviewed at the various employment offices was:

Knoxville Office	609	(of which 132 were referred by U.S.E.S.)
Harriman Office	172	
Elza Gate Office	1048	
K-25 Office	43	

Number of Hires:

Knoxville Office	98	
Harriman Office	19	(plus 15 pending)
Elza Gate Office	116	
K-25 Office	42	

Training

	Total Attendance for Week	Total Attendance to Date
Orientation	224	4102
Foreman-Supervisors Training	70	2162
Job Instructor Training	11	380
First Aid Training	20	524
Mine Rescue Training	19	65
Pre-Patrol Training	58	863
Pre-Process Training	82	622

The total personnel of the training department is 15.

Safety

No "lost time" accidents were reported during the week. However, 33 accidents requiring first aid treatment were reported.

Based on a survey of the entire K-25 area, it was decided to establish a temporary sterilization unit in the process area. This unit will be designed to sterilize all protective equipment and to service gas masks and oxygen breathing apparatus.

Temporary field headquarters have been established in the process and conditioning areas which will be used by the safety engineers and inspectors assigned to these areas.

Labor Relations

During the course of the week, it was decided to transfer the exit interviewers section from the employment department to the labor relations department. The purpose of this move is to coordinate all labor relations activities and to check all terminations carefully, particularly the discharge cases, toward the end that there be no repercussions.

INDUSTRIAL RELATIONS (Cont'd)

Labor Relations (Cont'd)

The N.L.R.B. hearing in the Power House case, scheduled for October 31st at Knoxville, necessitated conferences with the U.S.E.D. A memorandum was prepared by this department and was to be submitted; however, the hearing has been postponed until November 21, 1944.

A formal grievance procedure has been prepared and submitted for approval. Detailed plans are being made for the enforcement of this procedure.

Several discharge cases were reviewed and changed from discharge to voluntary quits.

Several levies on employees' salaries were received from the Bureau of Internal Revenue for the non-payment of income taxes.

Employees' Services

The acute shortage of houses still exists. The waiting list for one and two bedroom furnished prefabricated houses has reached the total of 16 and 20 respectively. From the present turnover rate, it is estimated that the first man on the waiting list will wait five or six weeks for an assignment. There is also a waiting list for the one and three bedroom unfurnished apartments. The trailers have been slow in coming but it is expected we will be assigned our quota of 156 by the end of November. The barracks have been filled to capacity during the past week and we are now assigning guards and firemen to the hutments in the Ford, Bacon, and Davis colony.

The increased laundry work given to us by the J. A. Jones Construction Company was far in excess of what we had anticipated and as a result, they were informed to cut the quantity in half. The amount of work being done is sufficient to keep the machines busy all day without too much work being piled up.

Sanitary conditions in the cafeteria seem to have improved somewhat but the quality of food and the size of the portions have not been up to standard. The power house canteen started operations on Friday, October 27, 1944.

Uniforms and equipment have been purchased for the football, basketball, and bowling teams. Miss Bamer has been working on the War Fund Drive and cards are being distributed to all employees for their contributions.

Medical

Summary of Treatments	October 23-29 Inclusive	
Industrial Accidents		
New Cases	33	
Retreatments	55	
Industrial Illness		
New Cases	0	
Retreatments	00	
Welfare Accidents		
New Cases	12	
Retreatments	10	
Welfare Illness		
New Cases	114	
Retreatments	87	
Other (Vaccines, etc.)		
New Cases	74	
Retreatments	35	Sub-total 420

INDUSTRIAL RELATIONS (Cont'd)

Medical (Cont'd)

Summary of Examinations

Pre-employment accepted	306		
Pre-employment rejected	1		
Pre-employment reclassified	0		
Re-hire	4		
Industrial Termination	89		
Other complete examinations	2		
Partial examinations	23	Sub-total	425

Patient-visits by employees of other operators

U.S.E.D.	0		
F.B.& D.	1		
Kellex	5		
Hooker	0		
Ferdeve	22	Sub-total	28
		TOTAL	873
Treated at S-50 First Aid	51		

Personnel

	Average Number on Payroll	New Hires	Terminated
Office	561	31	13
Plant Operation	299	6	4
Plant Maintenance	759	81	28
Laboratory & Research	72	9	0
All others	1754	160	79
TOTAL	3445	287	124

SECURITY DEPARTMENT

Personnel

	Quota	Terminated
Office of Assistant Superintendent, Security	3	0
Investigation & Verification Office	41	0
Guard Force	538	43
Fire Force	101	3
TOTAL	683	46

The guard posts in Buildings 302 and 310 in the process area were rearranged, placing both of these buildings in "restricted" areas. This rearrangement requires 90 guards in each twenty-four hours.

Captain Wells, who is assigned to the conditioning area, advised that in the near future Ford, Bacon & Davis will assume charge of guarding the temporary fence enclosing their area. This guarding now is done by Carbide guards. This change will permit the use of approximately 30 guards for other locations.

The extension on the front or west side of Guard Headquarters, originally intended for check alleys is now being rearranged for a Recruit Guard School. This same room may also be used for instructions given on the various shifts.

A temporary fence was erected on the east side of Buildings 302 and 310 to enclose the entrances to the vaults and fan rooms in these recently restricted buildings, permitting within the enclosure only those properly authorized.

Inasmuch as the Jones Fabricating Shop at the north end of the Process Area has taken over the grounds inside of the permanent fence line for a storage yard, arrangements are being made to run a temporary fence line at each end of this storage year north to the edge of Poplar Creek, which will include the shops they have at that place. It may also be necessary to erect another guard tower at the edge of the Creek and between these two temporary fences.

Notices were sent to the various Security Officers of other contractors in the K-25 Area calling their attention to information obtained of the use of, and possible sale of by some of their employees, intoxicants, and the action to be taken where such a condition is found by men of the Guard Force working in plain clothes.

The Carbide Fire Department responded to a very serious fire at the Asphalt and Tar plant of the Jones Corporation mid-way between the Power House Area and K-25 proper, and conducted themselves in an efficient manner. They were later aided by the Roane-Anderson Companies and the Oak Ridge Fire Department.

The Carbide guard force also responded to the above mentioned fire and handled vehicular and pedestrian traffic until relieved by Auxiliary Military Police in command of Major Klock.

H. D. Kinsey
General Superintendent

LOW PRIORITY

2483

ChemRisk/Shonka Research Associates, Inc., Document Request Form

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(This section to be completed by subcontractor requesting document)

J. Lamb / 1034A

Requestor / Document Center (is requested to provide the following document)

Date of request 8/18/95 Expected receipt of document 10/20/95

Document number K2-5378 Date of document 11/5/44

Title and author (if document is unnumbered)

(This section to be completed by Document Center)

Date request received

Date submitted to ADC

Date submitted to HSA Coordinator

(This section to be completed by HSA Coordinator)

Date submitted to CICO 10-5-95

Date received from CICO 10-6-95

Date submitted to ChemRisk/Shonka and DOE 10-16-95

(This section to be completed by ChemRisk/Shonka Research Associates, Inc.)

Date document received

Signature

[redacted]

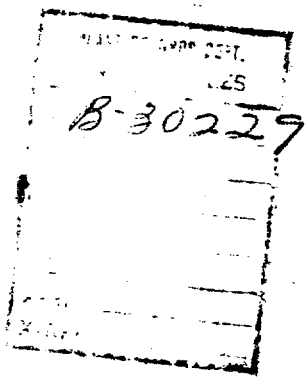
UNCLASSIFIED

REPORT NO.
KZ 5378

WEEKLY OPERATING REPORT

WEEK ENDING NOVEMBER 5, 1944

CARBIDE AND CARBON CHEMICALS CORPORATION
OAK RIDGE, TENNESSEE PLANT NCX



UNCLASSIFIED

[redacted]

Carbide and Carbon Chemicals Corporation
Oak Ridge, Tennessee Plant WCX

POWER HOUSE

Gross Electrical Generation 10,950,000 kw hrs.

Breakdown of Electrical Generation

Station Use	9.6%
To TVA	66.7%
To X-10	2.6%
To S-50	0.9%
To K-25	20.2%

Standby — Energy from TVA 0 kw hr.

Steam Generation 112,257,000 lbs.

Breakdown of Steam Generation

For Electrical Load	85.7%
To S-50	14.3%

Fuel Consumption

Coal		5890.5 tons
Oil	14005 gallons	90.0 equiv. tons
Total Coal		5980.5 tons

Fuel Received

Coal	259 cars	14,330.2 tons
Oil		0 gallons

Fuel on Hand, 12:01 AM, November 6, 1944

Coal	147,078 tons
Oil	23,800 gallons

Overall Boiler Efficiency	88.0%
Overall Station Efficiency	22.9%
Station Efficiency, Electrical Generation Only	26.4%

No. 2 unit (25,000 kw Allis-Chalmers) was tripped off the line by generator differential relay on October 30th. The machine was carrying 12,500 kw at the time.

POWER HOUSE (Cont'd)

Subsequent tests uncovered a defective current transformer in the generator neutral. Replacement or repair of the current transformer by Westinghouse will take about two weeks. The unit will have to remain inactive during this time since there are no spare transformers available.

No. 6 unit (25,000 kw General Electric) was rolled for the first time on October 31st, when overspeed and electrical tests were made. On November 2, the unit was put on the line for the first time and loaded to 10,000 kw. General Electric representatives are engaged in refining the balance of the unit.

On November 2, with the addition of No. 6 unit, a new station peak load of 85,000 kw was reached. On November 4, a new peak of 90,000 kw was established.

No. 3 boiler was lighted on November 2nd and put on the line 15 hours later at an output of 150,000 lb/hr. For the remainder of the week the total steam output of the station, averaging about 600,000 lb/hr. was divided equally between No. 2 and No. 3 boilers. Republic Meter representative and Carbide test men made adjustments of No. 3 boiler's combustion control equipment.

Because of leaks in by-pass valve bonnets on high pressure condensate return to the flash tanks, arrangements were made with Fercleve to shut off steam to S-50 on November 4 to make repairs. The outage lasted approximately 30 hours.

On October 31, Mr. Karl Milam reported for duty as efficiency engineer, completing the list of power house supervisory personnel.

Personnel Status

Power House

New Hires	7
Terminations	6
Active Personnel, November 5	261

Electrical System Operation

New Hires	1
Terminations	0
Active Personnel, November 5	33

PROCESS

54 Stage Operations

During the week an average of four cells was operated continuously on G-74. Four cells are in the hands of instrument repair men. One cell (#5) is down for mechanical repairs. Cell #1 (surge tank), involving only one blower is awaiting instrument department check before operation.

On Monday, October 30, 1944, a mistake made by a trainee operator resulted in damage to blower bearings. This damage has not been repaired to date.

54 Stage Operations (Cont'd)

Work is continuing on the building lube oil system. Before any reliable information on required changes can be gained, it will be necessary to bring all orifices in conformity with design specifications. This work should be completed by November 7. It is expected that desired data may then be taken.

Revisions requested by Mr. P. H. Bowen of Pacific Pump will be completed on November 6 or November 7. It is hoped that these changes will provide a solution to difficulties encountered with this system.

All instrument and mechanical repairs necessary on Cell #3 will be completed on November 6. On that date, it is expected that C-716 will be charged and operations begun.

The training program is proceeding satisfactorily; however, it is anticipated that a considerable increase in new men assigned to Building 303-2 for training is necessary immediately if requirements of Case I are to be met.

Case I Operations

Materials Received:

C-816	346 drums
C-716	0 drums
C-616	72 drums

Materials Transferred: None

Vacuum Testing

Preliminary testing was begun in cells 302-4.9 and 302-4.10; vacuum testing equipment is installed ready for testing to begin in cells 302-4.7 and 302-4.8 and pipe gallery 302-5.

Cell 302-3.9 and 302-3.10 are under final test with filters installed, and are 73% and 74% completely tested respectively (allowing 10% for final closures tests). Experiments on the absorption of U-24 by the filters were conducted. It was found that about 15% absorption exists, which is not prohibitive. Two types of seal Dressers are being used experimentally in these cells. Of these, one does not necessitate the removal of the seals. Inleakage across the seals is being eliminated by feeding carbon dioxide gas into the seal feed line to the stage pump during leak rates; this gas is condensed out in a cold trap, and the partial pressure caused by seal leakage is therefore not indicated by the vacuum gauge.

The following galleries are under test; their percentage completion of testing is shown:

302-1	80%
302-2	96%
310-1	78%*
310-2	90%
310-3	95%

PROCESS (Cont'd)

Vacuum Testing (Cont'd)

*An accident occurred during the testing of gallery 310-1; oil from the diffusion pumps of the vacuum pumping unit was blown over into the gallery piping by back leakage. At this time it is not known precisely how much of the system has been contaminated. The piping is being opened to determine its condition.

The electrical analogy of a cell with filters installed was set up by means of a resistance network in order to determine which available vacuum pumping position was most effective. It was proved that there was no appreciable difference between the three positions. Accordingly, it was decided to continue installation of vacuum pumps in the 5-6 position. The Kellex Design Group has given instructions to eliminate the 1-2 and 3-4 test connection openings in future cells.

C-216 Operations

Three cells have been operating at an approximate average load of 1000 amperes per cell for the past week.

An average of 20 pounds of C-216 per day have been used in the furnace room of the conditioning building. This, with the 50 to 60 pounds routed directly to the disposal plant, accounts for the total output for the past week. The rupture discs of No. 5 cubicle blew out due to an operational error. This discharged 10 pounds of C-216 to the atmosphere almost instantly.

G-74 Operations

The pressure alarm system was installed in the main G-74 header line during the week. Steps have been taken to have signal devices located at suitable points in 1408.

L-28 consumption has increased from a daily average of 5500 to 7700 gallons per day for the past week. This made it necessary to increase the shipping schedule of L-28 cars. However, before this could take effect, the supply of L-28 had practically been exhausted in the storage tank. A study of the report charts indicates that most of the increased consumption was in the process area rather than in the conditioning building.

The maintenance department has started to work on the installation of the warm converter.

C-216 Disposal

The C-216 content in the system has dropped from 2000 to 1000 mg./l. as a result of increased lime addition. Caustic feed to the scrubbing tower was increased from 80 to 110 g./m. The performance test in which 60 pounds of C-216 in the form of a 10% C-216 - G-74 mixture is fed to the tower per day is continuing.

In addition to this, Kellex requested that 3 pounds per hour of pure C-216 be run through No. 1 acid seal containing phosphoric acid for a 24 hour period. No overheating took place, but analysis revealed a trace of copper.

All vent lines from the Hooker building have been routed to the scrubbing tower.

PROCESS (Cont'd)

Flash Conditioning

A meeting was held with the process group of Case I at which time the various duties of the respective organizations during conditioning was discussed. In general, it was decided that the building shift organization would run the cell or cells in question according to directions and the conditioning organization would add or remove the conditioning gases from the cell and check on operating conditions. A preliminary procedure was also outlined at this time.

On Friday, a meeting was held in Mr. Rucker's office between representatives of Kellex headed by Dr. Benedict and the representatives of Carbide. Conditioning procedure for Case I was again discussed and procedures agreed upon.

An operating procedure based on these discussions is in the process of being written.

An initial group of seven operators is being trained for this work.

Utilities and Services Operations

Section 800 - The average daily pumpage at the recirculating water plant -

Make-Up Water	935,233 gallons
A-Loop	13,016,732 gallons
B-Loop	No flow
Fire Water	156,857 gallons

Section 1100 - Building 1101 is still under construction, but some equipment has been tested during this week. One Carrier compressor is now on a 48 hour test run. The Frick refrigeration engineer is also testing the Frick ammonia compressors, but is delayed somewhat by the water that has leaked into the compression cylinders as an aftermath of hydraulic testing of the suction and discharge lines. Testing on these compressors will continue during the following week.

A cooling water line under the Frick compressors broke during the week and caused considerable sub-floor wash and flooded the motor pits. This is being repaired at the present time.

Section 1200 - Building 1201 is in operation and furnishing air for the contractors and Ford, Bacon and Davis' conditioning building. All compressors are in operating condition.

Ford, Bacon and Davis has reported that the receiving tank in the basement of the 1400 Building is popping air. This is due to the fact that the operating pressure was raised from 100 to 110. This is to be corrected over the weekend.

Section 1500 - Building 1501 is operating normally and a marked improvement is shown in the boiler feed water treatment. The load remains approximately the same, and all available condensate is now being returned.

CONDITIONING

Cleaning Operation

The major portion of material cleaned during the week consisted of Niplate pipe. Cleaning production for this item has been stepped up approximately 25% over the past month. The improvement was accomplished by better technique gained from experience and a change in the solutions used. Rejections due to smut have been greatly reduced.

Leak Testing

Fifteen units were operated in the preparation area. There are now 118 leak detectors on the area. Of this number, 14 are under repair and 81 in use.

AC Blower Conditioning	During Week	Total to Date
Blowers received	115	1248
Blowers conditioned	169	1199
Blowers rejected	5	34

Rejections— 92B-1545 — Impeller rubbed casing. Repaired in shop.
914-218 — Would not hold vacuum. Replaced gaskets. Tested OK.
92B-764 — Would not hold vacuum. Sent to shop.
92B-1534 — Impeller rubbed casing - impeller and baffles damaged. Sent to shop.
92A-163 — Impeller seal leakage excessive - repaired - re-run- leakage still high.

Saturday, November 4, 1944, the maximum allowable impeller seal leakage rate was increased from 56.6 cc/min. to 160 cc/min. using G-74.

A portable leak testing unit has been prepared which will permit testing of seals on all units beginning next week. The test will be made after the unit has been conditioned.

Kellex is working out the details for tests which can be made in the repair shop on rejected blowers to determine the cause of leakage.

Converter Conditioning	During Week	Total to Date
Converters received	22	92
Converters conditioned	42	69
Converters rejected	2	2

The rejected converters appear to have been over plugged, based on data calculations.

Except for the installation of heaters on the Stokes pump discharge in the circulation system, for 6 furnaces, and repairs to the instrument lines for A-13-Q furnace, 9 units are ready for operation.

Delivery of conditioned converters to the process area was delayed, because of requested mechanical work on the converters. The plating is removed from the edges and from the surface ½" from edge, of all flanges. The threaded section of the coolant nipples is removed and trimmed to specified dimensions, to expedite welding in the field.

[redacted]

CONDITIONING (Cont'd)

Converter Running Test

Almost the entire week was spent in tightening the circulating systems and making minor adjustments to the stand.

Miscellaneous

Two cabinets have been fabricated for seal storage. They are located near the maintenance office and will be ready for use as soon as connections are made to the steam line.

WORKS LABORATORY

Physics Laboratory

Thirty-nine samples were run by the M.S. method at the S-50 site during the past week. Three instruments have been used in routine work. They have averaged 35% of the time in satisfactory operation. The rest of the time they have been in the hands of the maintenance department. The average time between receipt of the sample and the issuance of a preliminary report has been 22 hours. Only 9 samples were rejected because of moisture in the tube or damaged connecting fittings; this is a considerable improvement in the sampling technique over the previous week.

Because of difficulty in getting the purification system (used in removing impurities from the samples before attaching them to the M.S.) free from leaks, the first set-up has been abandoned, and two new units are being constructed. A supply of unions and valves received from the Heke Valve Company will aid in the construction of these new set-ups. 50 sample tubes made by Heke have also been received, and a transfer apparatus is being assembled to transfer a predetermined size sample from the Fercleve sample tube into one of the larger tubes before purification.

Certain changes in procedure have been instituted this week in order to meet Fercleve's request for a greater number of analyses at the sacrifice of some accuracy. Samples will be run on a M.S. if the response is not greater than 7, although this value is much greater than that required for high accuracy. Most of the samples will be run by new operators, with approximately 25% of them being re-run by more experienced operators as a check. Samples that cannot be pumped down within 15 minutes to a satisfactory pressure will be taken off the machine without further waste of time.

The personnel of the physics laboratory now numbers 43. It is planned to begin withdrawing the Carbide staff, now operating the Fercleve laboratory, about December 10, gradually turning over the operation to the Fercleve personnel.

Physical Chemistry Laboratory

Twenty-two samples have been analyzed by the counting method and reported during the past week. An additional 25 samples of normal material were run. This represents work that could have been directed toward a greater number of analyses of plant samples, had they been available. Ten samples a day are promised from the S-50 plant in the future.

[redacted]

Physical Chemistry Laboratory (Cont'd)

The time lag between receipt of sample and report of analysis by the counting method has been too great to permit full utilization of this method. Since the greatest loss of time has been in the transformation of the C-616 to the sulfate, alternate methods are being worked out to reduce this time. Instead of making several evaporations of the hydrolyzed product with nitric and sulfuric acids, the precipitation of the metal with ammonia followed by a single evaporation in sulfuric acid appears to promise a substantial reduction in this loss of time. The present personnel of this laboratory consists of 22 Carbide and 12 Fercleve employees. Most of the latter group are still being trained in the operations.

Chemical Laboratory

Work continues slowly on the laboratory and no rooms have been turned over for operation as yet. However, by the end of next week, it is expected that at least five completed laboratories will have been turned over for operations. Temporary electrical fixtures and plumbing fixtures have been installed in view of the fact that part of the fixtures have hot been supplied by the laboratory furniture manufacturer.

The regular routine analyses, which have been discussed in detail previously are still being carried out by the laboratory with no additional routine control operations having been started.

Oil samples and grease samples have been checked for the transportation department in order to identify oils and greases supplied to them on transfer from Ford, Bacon and Davis where the labels have been lost from the containers. More samples of oil have been supplied by the maintenance department and are being tested with specification analyses at the present time. The apparatus for a complete oil and grease test is not yet complete but fortunately enough equipment is available to do a fair fraction of the work. As soon as the rooms are turned over, this A.S.T.M. specification equipment will be set up in its final form in order to be available at all times for carrying out A.S.T.M. analyses throughout the plant.

During the week, the laboratory was asked to be ready to carry out routine 216 analyses for the rapid flash conditioning to be done in the Process Area. Practically the whole laboratory staff worked on this equipment for three days and it is now ready for operations using either one or two methods; the mercury shaking equipment, and the other a chlorine displacement method followed by back titration of caustic solution.

Equipment is being lined up very rapidly for the carrying out of the specification acceptance analysis checks on the C-2 chemicals and samples of 616.

It is probable that actual work can start on the setting up of the two spectrographs sometime next week as the two rooms to be used for these two instruments are expected to be available by the middle of the week. The infra red gas analyser for 616 analysis is also expected to arrive sometime next week and will be set up as soon as possible.

Work has continued satisfactorily along the lines of industrial hygiene analysis and the method for 216 in either gases or biological material has been developed to a very satisfactory precision. Methods for F ion in dust or in various biogolical materials are being outlined at present and will be set up as certain special reagents are available.

[redacted]

WORKS LABORATORY (Cont'd)

Chemical Laboratory (Cont'd)

The routine checking of the metaphosphate feeding at the water recirculating plant is being lined up and will probably be put in operation sometime toward the end of the week. There is apparently still some trouble due to bacterial growth in the cooling towers and it appears as though blue stain is starting to show upon the redwood boards used in the towers. The actual method of treating this and the most desirable method of handling this formation of blue stain is being studied and it is probable that within a week or so definite recommendations will be made to the operating plant as to the best methods of handling this sort of problem.

Some preliminary tests on cyclone and Z-bar dust filter designed to remove dust of the type obtained when 616 reacts with air seem to indicate this sort of equipment would not be adequate for the protection of the personnel in the area where 616 is released. More complete tests are contemplated and as soon as any definite results are obtained, specific recommendations will be made to the engineering design department.

A series of conferences and discussions relative to the outline of work for the tube groups have been had and a definite program has been outlined and some time has been spent in the discussion of the design of the equipment. This particular department is already greatly in need since a great deal of work is being done on tubes here. It is hoped that some of the apparatus can be put together quite rapidly so that actual laboratory data can be obtained to supplement the work being done by the conditioning group on these particular materials.

Analyses of 716-G74 mixtures from the 54-stage operation are being carried out at present for the process group. The actual equipment available is not as satisfactory as the laboratory group desires. The laboratory group does not feel that such a device as this modified McLeod gauge gives satisfactory results and more accurate methods are being developed so that in the future when it is necessary to determine the composition of G74-716 mixtures, accurate results can be given.

Work has continued on the development of a satisfactory dew point meter and a device has been constructed which gives accurate results when checked with gas which has passed through dry ice-trichlorethylene mixtures. Apparently, in this lower dew point range the device is satisfactory and it is being used at the present time for checking the dew point of the G-74 in the area. It was found that the General Electric meter previously used is not in very great error in this particular type of dew point checking although there does seem to be serious discrepancy between the results obtained with this instrument and with that obtained by the Linde representative using a U. S. Bureau of Mines device.

INDUSTRIAL RELATIONS

Employment

Eight recruiters were on recruiting trips for the entire week.

The Elza Gate employment office was moved into another building in the Elza Gate area.

Employment (Cont'd)

The following figures indicate the number of interviews and hires at each of the employment offices:

Office	Interviews	Hires
Knoxville	502	95
Harriman	169	40
Elza Gate	970	103
K-25	66	42

Training

All groups of the training department have been moved to Wheat School, except an office group of five employees, which is occupying room B-116 until additional space is secured.

At the present time a continuous film schedule is being maintained with the instrument, patrol and fire departments, the physics laboratory, and the process division. These pictures include technical films, sound slide films, and Office of War Information morale films.

On November 3, 4, and 5, a series of slides were shown to various groups of power house personnel. These slides were loaned to us by the Westinghouse Company for use with training of personnel in this division.

Industrial relations pamphlets concerning the vacation plan, occupational disability, and the Oak Ridge hospitalization plan have been prepared and presented to the plant superintendent for final approval.

A preliminary survey has been made on the proposed employees' handbook. The training department is working with Mr. Tyra on this assignment.

The total personnel for the training department is 17.

Training Classes

	Total Attendance for week	Total Attendance to date
Orientation	246	4,348
Foreman-Supervisors	34	2,196
Job Instructor	20	400
First Aid	12	536
Mine Rescue	0	65
Pre-Patrol	60	923
Pre-Process	297	1,919

Safety

One "lost time" accident was reported, and 26 accidents requiring first aid treatment were reported.

[redacted]

Safety (Cont'd)

A preliminary draft of the disaster plan for the K-25 Area was submitted to the plant superintendent.

During the week four employees were added to the staff of the safety department.

Employees' Services

The waiting list for various types of houses is increasing and numerous terminations are resulting from this, due to the length of time it takes for the list to decrease.

The power house canteen opened for operation Sunday, November 5, 1944, serving sandwiches, etc. on a 24 hour basis. Proposed plans for additions to the present steam table arrangement in the main cafeteria #1 have been submitted.

Arrangements were made with the Fercleve Corporation to do their laundry work.

A recreation supervisor (Mr. Al Burris) has been employed and will report for work on November 13, 1944.

Sufficient returns on the National War Fund Drive have not been received to estimate the amount of money collected, but from all indications we can safely say that our quota of $3,000. will be reached.

Wage and Salary

A preliminary review of Ford, Bacon and Davis, Inc. classifications and rates was made with a view to fitting them into our schedule.

A supply of personnel folders has been received (the supply having been exhausted for several months), and all records are now being placed in these standard folders.

Treatments	C&CCC	Fercleve	Kellex	Hooker	FB&D	USED	Totals
1. Industrial Accidents							
New Cases	35	10					45
Retreatments	47	7					54
2. Industrial Illness							
New Cases							
Retreatments							
3. Welfare Accidents							
New Cases	12	1	1				14
Retreatments	35						35
4. Welfare Illness							
New Cases	142	5	2				149
Retreatments	57						57
5. Other (Vaccines, etc.)							
New Cases	44	1					45
Retreatments	46						46

[redacted]

INDUSTRIAL RELATIONS (Cont'd)

[redacted]

Medical (Cont'd)

Complete Examinations	C&CCC	Fercleve	Kellex	Hooker	FE&D	USED	Totals
6. Pre-employment accepted	325	42	3				369
7. Pre-employment rejected							
8. Pre-employment reclassified	1						1
9. Re-hire	5						5
10. Termination	79						79
Partial Examinations							
11. Return to work	11						11
12. Industrial Hygiene	4						4
13. Goggles Fitting							
14. Refractions	20						20
15. Other	16				7		23
Treated at S-50 First Aid							85

Labor Relations

The proposed grievance procedure was discussed and we are now arranging to have it cleared through the Army Labor Relations office. A new termination procedure is also being prepared and will be presented for approval. Under the disciplinary procedure, a formal hearing was held in the case of John L. King, a guard. A report was submitted to the plant superintendent, and the employee was returned to work.

A procedure was set up for allowing sufficient time off for voting for employees who are qualified to vote on Election Day. It was decided that all employees eligible to vote should clear through the labor relations department where they would be authorized to take time off with pay.

The usual number of selective service cases, garnishments and quasi-legal problems were handled.

Personnel

	Average Number on Payroll	New Hires	Terminations
Office	595	38	4
Plant Operation	306	13	6
Plant Maintenance	804	81	36
Laboratory & Research	80	9	1
All Others	1,858	171	67
Totals	3,643	312	114

MAINTENANCE DEPARTMENT

The maintenance department personnel on November 5, 1944, showed an increase of 85 over the previous week:

[redacted]

Manual	828	
Supervisory	67	
Office Personnel	63	958

Total orders on hand beginning of week	1,159
Total orders received during week	1,007
Total orders completed during week	986
Total orders on hand November 5, 1944	1,180

Absenteeism was 11.5% during the week.

Instrument testing is being supervised in Buildings K-302-3; K-302-4; and K-303-2. Cell No. 3 in K-302-3 was completely tested for both pneumatic and electric systems. Due to difficulty encountered with plugged and leaking lines, it would seem unwise to operate other cells without giving them the same test.

Four men from the electronics department are assisting Dr. Hier in building electronic units for the conversion of the assay machines.

Electrical maintenance is being maintained in Sections 300 - 800 - 1000 - 1200 - 1400 - 1500. Time department clocks, maintenance department, and garage buildings are also being serviced. Considerable wiring was remodeled in the new carpenter and miscellaneous craft shops in the old F. B. & D. heavy equipment building.

The machine shop has been engaged in machining Dresser couplings, and brass baffles for A. C. Pumps, as well as doing machine work on new type seals for A. C. Pumps. Fire extinguisher fittings, machine parts for C-216 drums and various pieces of equipment for the laboratories were manufactured during the week.

The welding school was operated on a twenty-four hour schedule, training men on Monel, gas, and arc welding, as well as six-inch standard black pipe. The welders worked with leak detectors in Cells 2 and 3 in Building K-303-2, Cells 9 and 10 in Building K-302-3 and Cells 9 and 10 in Building K-302-4.

During the week, the grounds and buildings section moved to the new location in the old Ford, Bacon and Davis heavy equipment building. Several hundred man hours were required to install new partitions and electrical connections.

Repairs to toilet facilities in several buildings and relocating of steam return and water lines occupied the time of the piping department.

The carpenter and paint shop worked on twenty-six repair orders for sundry items of repair and new work.

Janitor service was maintained in the safety, hospital, laundry, laboratory, Garage, instrument, Wheat School and Edenfield buildings of the administration area. Service was also given in K-303-2, K-303-3, and K-302-3 buildings and maintenance superintendents' offices in the process area. Thirty furniture moves and inter-office changes were completed. Sixty-seven moves were made for the Property Department.

The repair garage completed repairs on 491 job orders during the week. Five hundred ninety six (596) pieces of equipment are being maintained at this time as follows:

Carbide and Carbon Chemicals Corporation	357
Ford, Bacon & Davis	229
Hooker Chemical Company	6
U. S. E. D.	4
Total	596

MANUFACTURING OFFICE [redacted]

Stores and Receiving Departments

Ford, Bacon & Davis have released to us their former Warehouse #1 which is now being used as our receiving department, receiving department offices, and tentatively is to serve as a storage for bulk SV stores material. This building now contains all of the materials Ford, Bacon & Davis Construction have transferred to us; an inventory of same is now in process. This material will necessarily be stored here for some time to come until adequate space is found in the various departmental storerooms at which time it will be distributed. This building also contains miscellaneous material released by Kellex Corporation for which material transfers are now in process. Alterations are now being made through the interior to accommodate our receiving department personnel and also bulk storage space is being partitioned off from the receiving department proper. It might be well to mention in this connection that no vacant space will be available for any other purpose than outlined above.

The telephone in the power house stores' office has been installed, the number of same being 8876. J. A. Jones Construction Company has released the major portion of their warehouse south of the power plant to us and is now being used temporarily for bulk storage and spare parts for this area. As yet, no provision has been made for heating the offices in this building which are to accommodate along with our stores clerks, the traffic department yard clerk.

Alleys between transformer vaults 3 and 4, and 4 and 5, have been fenced in and are being used for storage areas for bulk materials and spare parts for the Process department. Alley between vaults 5 and 6 is being used for general process stores as well as vacuum testing department stores. Bins have been installed and stores materials are in the process of being set up. Alley between vaults 7 and 8 is being used for the temporary storage of C-216 disposal unit equipment and parts. In addition, we are also contemplating the storage of bulk instrument parts for the instrument department. Alley between vaults 10 and 11 is being used for the electrical storeroom. Bins have been installed and this storeroom is being occupied. The laboratory stores which occupy part of this area is now being moved into the alleys between 11 and 12, in which bins are being installed and materials which have been ordered for the various laboratories are being placed into them.

Fences in these vaults are not of the type suitable for the safe keeping of materials within these enclosures. It is believed that this has been covered in a previous letter to the superintendent's office for disposition. A suitable space for the storage of structural shapes, steel plates, pipe and conduit and miscellaneous materials which require storage of materials outside of buildings should be arranged for.

Conditioning Stores, SV. Additional bins are being installed in this storeroom to accommodate the supplies necessary for the operating of the maintenance department.

Garage Stores. A general clean-up is being made in this area and in the Light Equipment Storeroom to accommodate parts and supplies being taken over from Ford, Bacon & Davis.

[redacted]

MANUFACTURING OFFICE (Cont'd)

Stores and Receiving Departments (Cont'd)

Spare parts for various machinery and equipment were ordered by the Kellex Corporation and consigned to "Kellex-Jones-Notify Carbide and Carbon upon arrival". All of these spare parts were delivered to the J. A. Jones Construction Company and stored in their warehouse. Since various pieces of these spare parts are needed by Carbide from time to time, arrangements have been made to transfer immediately all spare parts as well as laboratory supplies from the J. A. Jones' Warehouse to the process and laboratory stores respectively. Such transfer is now in process and it is expected to be completed within a week or so. All future deliveries of spare parts will be transferred to Carbide as soon as received by Jones. This procedure will be accomplished by having a receiving clerk stationed in the J. A. Jones' Warehouse to check all such items received.

PAYROLL AND TIMEKEEPING DEPARTMENTS

Weekly Hourly Payroll. Payrolls submitted for 90% reimbursement through W/E 10-29. Payrolls submitted for 100% reimbursement through W/E 9-28. Weeks ending 10-1 and 10-8 are held up for overtime approvals.

Weekly Salary Payroll. Payrolls submitted for 90% reimbursement through W/E 10-29. Payrolls submitted for 100% reimbursement through W/E 9-10. Weeks ending 9-17, 9-24, 10-1, 10-8, and 10-15 are held up for overtime approvals. These approvals are now in our hands and will be submitted within the next few days

Monthly Salary Payroll. Payrolls submitted for 90% reimbursement through month ending 10-31. Payrolls submitted for 100% reimbursement through 6-30-44.

All payroll departments moved from Wing A to Wing C on November 5, 1944.

Timekeeping Department. Plans are now being made to put clock alleys in the conditioning area for maintenance, stores and operators; also a clock alley near the garage to cover garagemen and carpenters.

PURCHASING DEPARTMENT

The work in the purchasing department is still behind due to the fact that the present number of buyers in this department are not sufficient to handle the large number of requisitions received. Additional buyers are to be hired as soon as additional space is obtained for this department. It is expected that additional space will be available within the next few days. The purchasing agent is arranging to set up his records in such a manner that statistics regarding the number of requisitions received, number of purchase orders placed, etc., will be available for this weekly report.

Total number of purchase orders placed to date is approximately 4,100, of which approximately 250 orders were placed during the past week.

ACCOUNTS PAYABLE DEPARTMENT

Approximately 300 invoices totaling approximately $80,000 were audited and placed for payment during this period.

MANUFACTURING OFFICE (Cont'd)

Voucher and Cashier Department

Total cash disbursements for this period amounts to approximately $310,000 and reimbursements received amount to approximately $600,000. This department is now analyzing the charges made against the account "Government War Projects Expense", and it is expected that the reimbursable portion of these charges will be ready for presentation to the audit section within the next few weeks.

All invoices covering materials purchased in connection with the cafeteria are being held up until the audit section receives a signed copy of the cafeteria contract.

Printing, Mail, and Drawing Records Department

Stationery stores department has been fully moved to its new location. As yet, the forms room has some additional work in the way of lining up the bins. An additional person has been requisitioned to handle the issues which have now reached an average of one hundred and sixty five (165) per day.

The addressographing department has now been moved to its new office space which, it is believed, will be sufficient for the duration of this job. An additional operator has been requisitioned in order that we may maintain our schedules on payroll work.

Dispensary stores has no changes to report. Work is progressing in regular order.

Under the present circumstances of moving to new offices, it has been exceptionally difficult to maintain the mail schedules but offices are being contacted as many times as possible. Quite a few new buildings have opened up in the area, making our inter-area rounds longer. As yet, no additional car facilities have been supplied.

Photostating and teletyping are still under Jones and progressing in regular order.

The volume of work in the freight and traffic department is increasing and the following figures show the various items handled by this department during this period:

Travel Orders	95
Inbound Material - Carloads	272
Special Shipping Orders	15
Itineraries	28
Tickets Picked Up	12
Itineraries Checked	12

SECURITY DEPARTMENT

Personnel	Quota	Terminated
Office of Assistant Superintendent, Security	3	0
Investigation & Verification Office	43	0
Guard Force	585	39
Fire Force	114	3
Totals	745	42

SECURITY DEPARTMENT (Cont'd)

Posts were established at inner restricted area at the power house. This excludes all traffic to Fercleve and Ferguson through the power house grounds.

A recommendation was made for erection of permanent fence midway between the power house building and S-50 process building. This will be the beginning of the eventual plan of Fercleve to fence in their own area and patrol it with their own guards.

The extension in front of guard headquarters was closed in to make a school room for recruit guards instead of being used for check alleys.

The security office will be open every Sunday for verification of records of those questioned regarding badges, or lost or forgotten badges.

H. D. Kinsey
General Superintendent

LOW PRIORITY

2483

ChemRisk/Shonka Research Associates, Inc., Document Request Form

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(This section to be completed by subcontractor requesting document)

J. Lamb / 1034A

Requestor / Document Center (is requested to provide the following document)

Date of request 8/18/95 Expected receipt of document 10/20/95

Document number K2-5379 Date of document 11/12/44

Title and author (if document is unnumbered)

(This section to be completed by Document Center)

Date request received

Date submitted to ADC

Date submitted to HSA Coordinator

(This section to be completed by HSA Coordinator)

Date submitted to CICO 10-5-95

Date received from CICO 10-6-95

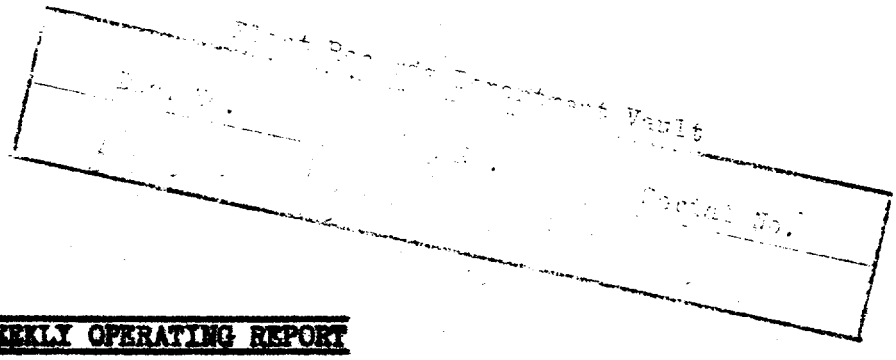
Date submitted to ChemRisk/Shonka and DOE 10-16-95

(This section to be completed by ChemRisk/Shonka Research Associates, Inc.)

Date document received

Signature

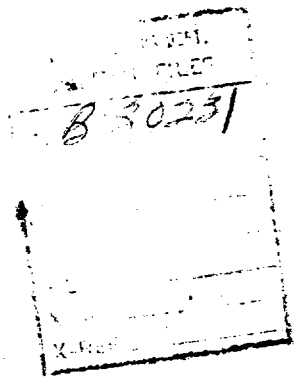
~~SECRET~~ UNCLASSIFIED



WEEKLY OPERATING REPORT

WEEK ENDING NOVEMBER 12, 1944

REPORT NO.
KZ 5379



CARBIDE AND CARBON CHEMICALS CORPORATION
OAK RIDGE, TENNESSEE PLANT WCX

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This document has been approved for release to the public by:
Technical Information Officer
Oak Ridge K-25 Site
Date 10/6/95

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17 pages A

Carbide and Carbon Chemicals Corporation
Oak Ridge, Tennessee — Plant WCX

KZ 5379 3 A

KZ 5379 3 A

POWER HOUSE

Gross Electrical Generation		10,328,000 kw hrs.
Breakdown of Electrical Generation		
Station Use	10.9%	
To TVA	63.4%	
To X-10	2.6%	
To S-50	1.1%	
To K-25	22.0%	
Standby — Energy from TVA	0 kw hr.	
Steam Generation		112,790,000 lbs.
Breakdown of Steam Generation		
For Electrical Load	80.6%	
To S-50	19.4%	
Fuel Consumption		
Coal		6,250 tons
Oil	4,847 gallons	29 equiv. tons
Total Coal		6,279 tons
Fuel Received		
Coal	244 cars	13,484 tons
Oil		18,047 gallons
Fuel on Hand, 12:01 AM, November 13, 1944		
Coal		154,381 tons
Oil		37,000 gallons
Overall Boiler Efficiency	86.8%	
Overall Station Efficiency	20.7%	
Station Efficiency, Electrical Generation Only	25.6%	

Because of leaking tubes in the wall headers, No. 3 boiler was taken out of service on November 6 after four days' operation. Subsequent test and inspection showed 21 tubes that required rerolling and two return bends in the economizer that required welding. These repairs were made by Combustion, and the boiler will be subject to a hydrostatic test as soon as operating conditions permit.

This document contains information affecting the National Defense of the United States within the meaning of the Espionage Act, U.S.C. 50:31 and 32. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law.

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Classification changed to: UNCLASSIFIED
(level and category)

Thomas W. Hellen 9/12/95
ADC or ADD signature (first reviewer) Date

14Sep95
ADD signature (second reviewer) Date

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POWER HOUSE (Cont'd)

Following the relocation of the Ducon feedwater regulator by power house maintenance to minimize vibration effects, No. 1 boiler was put into service on November 11. During the 5-day interval that No. 2 boiler was carrying the entire station load, a sustained peak output of 720,000 pounds per hour was reached on November 6.

On November 7, the General Electric representative tried out the frequency selecting device on No. 6 unit, which is one of three main generating units designed for emergency standby service for the variable frequency units. In changing the machine's frequency from 45 to 65 cycles per second, the selecting device caused the governor and control valves to operate without overshoot in speed. On November 11, General Electric completed all balance runs on the unit, and began to fill the generator casing with hydrogen on November 12.

Arrangements were made to shut down S-50 on November 7 for a period of 22 hours to replace by-pass and drain valves on the high pressure condensate return lines. Welding of the bonnets of the valves originally installed was tried during the outage of November 4, but these repairs were not entirely successful in stopping the leaks. In spite of this outage, the steam taken by S-50 averaged approximately 130,000 lb/hr, reaching a peak of 203,000 lb/hr. on November 12.

The high pressure condensate return system was inspected by Mr. Wilson of Allis-Chalmers, designers of the flash tanks. After observing the operation for two days, Mr. Wilson recommended that orifices in the lines to the flash tanks and in the water and vapor lines to the condensers be increased.

Personnel Status

Power House

New Hires	9
Terminations	3
Active Personnel, November 12	267

Electrical System Operation

New Hires	2
Terminations	1
Active Personnel, November 12	34

PROCESS

5A Stage Operations

On Monday, November 6, vacuum testing crews were returned to Building 303-2 to test changes made in the equipment after initial vacuum testing was completed. In an effort to expedite vacuum testing and instrument work, all cells except No. 3 have been made available to these two groups.

Cell No. 3 was charged with C-716 on Sunday, November 5. Faulty instrumentation forced a shutdown on November 8. Valuable information gained from this experience is covered in a separate report. The cell was restarted on November 11, and is operating satisfactorily.

The building lube oil system has been placed in design condition and will be operated experimentally as soon as the vacuum testing division has completed its work.

[redacted]

PROCESS (Cont'd)

54 Stage Operations (Cont'd)

Several changes have been made in the coolant circulating pump connections. A progress report covering work up to November 10 has been released. Mr. P. H. Bowen of the Pacific Pump Works is continuing to work closely with operations in an effort to identify and eliminate the cause or causes of unsatisfactory performance.

Seven technical men recently assigned to instrument training have strenghtened the training program on all shifts. Increased emphasis is being placed on this phase of 303-2 work.

Vacuum Testing

The percentage of completion of the cells under preliminary test is as follows:

K-302-4.7	12%
K-302-4.8	43%
K-302-4.9	44%
K-302-4.10	40%

A good deal of trouble is being experienced with getting the Venturi flow-meters tight in the cells.

The following cells are under final test with converters installed:

K-302-3.9	75%
K-302-3.10	82%

The installation of the 4" evacuation riser, the welding in of bull-plugs and tying in of permanent blow-out preventer connections held up testing during the week.

Pipe gallery K-302-5 is now under test and 25% completely tested.

Pipe galleries K-302-1, K-302-2, and K-310-3 are in the hands of the contractor for the replacement of defective valves; all are more than 95% completely tested. Gallery 310-1 is still under repair following contamination of the system by pump oil the previous week.

Gallery K-310-2 was released to the contractor for installation of permanent building by-pass lines.

The division is testing in the following cells of building K-303-2 at the request of 54-Stage operations crews: Cells 1, 2, 4, 5, 8, and 9. Testing here consists merely of checking alterations in the systems made by the contractor during his recent work in the building.

Testing of carbon absorbers, F-111 A and B, in Section 100 is under way.

C-216 Operations

Generators 1, 2, and 3 have been operating all week. No. 1 and No. 2 have been operating at 500 amperes and No. 3 at 1000 to 1500, depending on the requirements. The average production per day has been 63 pounds, and the average consumption by the disposal plant and the conditioning building has been 48 and 24 pounds per day respectively

PROCESS (Cont'd)

C-216 Operations (Cont'd)

The No. 2 absorber was being cleaned with air at 220 F., but chemical analysis showed that this temperature was not high enough to drive off all the HF. It has not been necessary to regenerate these absorbers more frequently than once a month. An aluminum anode holder plate was tried for a few days but upon removal it was found to be badly corroded. Line voltage on the No. 2 generator increased to 9.2 volts at 1000 amperes, so the amperage was cut to 500. An analysis of the acid seals, which are connected to the C-216 lines coming from the cells in 1301, showed two pots with 98% and the third with 89% sulfuric acid. It is believed that the back pressure caused by the hot air from the absorber was being relieved through this seal, thus picking up moisture and blowing off SO_3.

G-74 Operations

Consumption of L-28 for the previous week jumped from an average of 7500 to 9271 gallons but has dropped back to 6200 gallons for the past few days. Carbide has now taken over the distribution system in the process area which is reflected in the recent curtailment of consumption. Prior to the peak consumption day of 9271 gallons, the operations group had not as yet been completely organized.

Because of the sudden increase in consumption during the earlier part of the week, and the difficulty of getting cars consigned out of the Cincinnati yards, two cars from Y-12 were reconsigned to K-25. The capacity of the vaporizers was checked and it was found that they could at least satisfactorily take care of 920 cu. ft. per minute. This is more than twice the average future demand as estimated in a report dated October25, 1944.

C-216 and Acid Disposal

The disposal plant performance test will be completed Monday, at which time the tower will be open in order that the effects of the test, if any, may be observed. An average of 48 instead of 60 pounds of C-216 per day has been fed to the tower during the past week. Laboratory tests show less than 2 ppm of C-216 in exhaust gas and 1000 mg./l. of C-216 in the system. The lime addition rate is 12.5 lbs./hr. and the caustic flow to the tower is 110 gal./min. with a system temperature of 80 F.

The acid disposal plant has operated satisfactorily.

Flash Conditioning

Operating instructions have been written for the dummy run on G-74. It is planned to make this run at the same time that the process group is making a mechanical run on G-74. G-74 will be charged into the C-216 cylinders and will then be used as it is later expected to use C-216. This will afford the opportunity, without the hazard of C-216, of working out coordination details and also indicate whether or not the selected conditions for flash conditioning will be feasible.

The operators are being familiarized with these instructions as well as the instrument board and readings which they will be expected to take.

Utilities and Services Operations

Section 800 - The average daily pumpage at the recirculating water plant -

PROCESS (Cont'd) [redacted]

Utilities and Services Operations (Cont'd)

Make-up Water	608,969	gallons
A-Loop	6,940,265	gallons
B-Loop		No flow
Fire Water	147,429	gallons

Operations for this section was normal throughout the week.

Sanitary Water Plant - Operated by J. A. Jones Company.

Sewage Disposal Plant - Operated by J. A. Jones Company. Mr. J. A. Armitage and a representative of Kellex contacted the State Department of Health during the last week, and found that it would be possible to pump untreated sewage into the Clinch River without violating any State health laws or practices. As a result of this contact, it is probable that the present sewage system will be re-designed prior to Carbide's acceptance, such that the present treating system will be abandoned and the sewage system in the future will consist primarily of a pumping station to dispose of raw sewage in the Clinch River.

Section 1100 - This section is still under construction, however initial tests of some equipment have been started.

The second Carrier blower that was tested indicated some bearing trouble. However, this condition has been corrected by the contractor.

Section 1200 - This section is in operation and no trouble is being experienced.

Section 1500 - Operations are continuing normal, and feed water treatment has been stabilized.

Summary of Steam Plant operations for the past week is as follows:

Boiler No. 1	4,590,000	lbs.
Boiler No. 2	5,348,000	lbs.
Boiler No. 3	4,619,000	lbs.
Total	14,557,000	lbs.
Raw Water Used	6,186,000	lbs.
Condensate Returned	4,209,000	lbs.
Coal Used	808.72	tons
This figure is based on a ratio of 1 pounds of coal per 9 pounds evaporation.		
Total coal received to date	7,924.85	tons
Total coal used to date	3,535.94	tons
Total coal in storage	6,025.73	tons
Efficiency per cent	78.0	

CONDITIONING

Cleaning Operation

As soon as heating coils can be installed in one of the large acid tanks, capacity for cleaning with hot acid will be more than doubled. Installation should be made early next week.

CONDITIONING (Cont'd)

Cleaning Operation (Cont'd)

The Midwest Pipe Company expects to put on an afternoon shift next week to speed up production in their shop.

Cleaning operations for the week were normal.

Leak Testing

All units in preparation area (15) were operated. Total leak detectors now in operation in entire plant-92. There are 7 units under repair and 125 on hand at the site.

An inventory of Westinghouse vacuum pumps was made by representatives of USED, PE&D, and C&CCC companies. It is expected that all pumps not permanently installed in the Conditioning Building will be transferred to C&CCC.

AC Blower Conditioning

	During Week	Total to Date
Blowers received	143	1,391
Blowers conditioned	106	1,305
Blowers rejected	20	54

Total number of rejections increased this week because blow out preventer tests were made on all pumps. Previously, only spot checks were made while experimenting to determine the proper type of leak tester. The PG seal leakage tests have checked those made by Allis Chalmers closely enough so that it may be possible to waive these tests or at least to make only spot checks.

Converter Conditioning

	During Week	Total to Date
Converters received	24	116
Converters conditioned	14	83
Converters shipped to Process Area	25	63

Sixty-three converters have been sent to the Process Area. It is planned to send no more over until at least 10 units have been checked on the running test stand.

Difficulty was experienced with the strip heaters added to the circulating piping. Two units were down several days on this account. A change is to be made in the set-up of the heaters, and automatic control of the heater temperatures provided.

There were six furnaces in operation at the end of the week. Completion of the 18 large furnaces is being pushed at the present time.

Running Test Stand

Trial run on this unit developed trouble with the seals on the AC blowers. The 716 used on the inner seal condensed and the seals were scored. The seals were changed and steam tracer lines were installed along the 716 lines.

CONDITIONING (Cont'd)

Running Test Stand (Cont'd)

Converter #B-136 was set in place in No. 5 position November 8, 1944 and a trial run made on the 9th. Calculations resulted in a negative slope factor.

The first official test run was made November 11, 1944, and the results appeared to be satisfactory.

WORKS LABORATORY

Physics Laboratory

Three mass spectrometers were operated during the week. The average period of satisfactory operation was 51%. This represents a substantial increase from the figure of 34% of the previous week, and reflects the change in procedure by which the maintenance department has operated on 24-hour call. It is hoped that the efficiency will be further increased when the maintenance department goes on three-shift operation, which change is planned for this week.

The construction of the purification and transfer systems was continued during the past week, and it is expected that both systems will be completed this week and that it will be possible to process at least a part of the Fercleve samples through this equipment. All sample tubes now on hand are being leak-tested in order that only good tubes will be used to receive transferred samples.

Progress on Laboratory C included the erection of the concrete block outer walls, placing of steel beams to support first floor joists, and erection of the roof frame work.

The counting group is moving out of Fercleve Laboratory No. 1 this week in order to make room for Fercleve men trained at Columbia University, who are to report on November 14. This will also make it possible to begin installation of the fifth spectrometer. However, the increasing likelihood that it will be necessary to remain at the S-50 site beyond the date previously agreed upon because of postponement of the construction schedule of the K-25 Laboratory, makes more acute the need for some additional space in present quarters.

Physical Chemistry Laboratory

Three counters have been in almost continuous use this week. The counters have been in satisfactory operation more than 90% of the time. Due to the short counts which are being made, the amplifiers are idle about half the time.

All procedures have now been written up, and those on titration, distillation, amplifier control, and sample flow have been issued. Some difficulty has been experienced with titration of samples. There appears to be a difference between the results obtained by different operators. Research on this problem will be carried out in order to make this operation run more smoothly.

The time required for conversion of the process gas to the sulfate has been reduced by the following procedure: The sample is hydrolyzed and then poured into ammonium hydroxide; the precipitate is washed by decantation, then dissolved in sulfuric acid and evaporated to dryness.

WORKS LABORATORY (Cont'd)

Physical Chemistry Laboratory (Cont'd)

Buildings at K-25 are proceeding slowly but surely. Kellex called a conference Saturday morning and announced that the laboratory could not possibly be ready by December 10. Dates such as January 1 and February 1 have been frequently mentioned.

Building construction in Laboratory Building No. 2 at S-50 is at about the same stage as last week. However, the sinks and traps have finally arrived, and it should be possible to move in by Wednesday or Thursday.

Twenty-two Carbide people and 13 Ferclave people are now employed at the No. 2 Laboratory. Only two of these have not been completely trained for some particular operation. It is intended to train several Ferclave people for supervisory positions by training them in all the various operations.

Chemical Laboratory

The regular routine control analyses have been run with several additional controls being set up. The apparatus for determining metaphosphate concentration in the recirculating water has been set up and is operating as a control method. Oil samples were run for the maintenance department and additional equipment is being lined up as rapidly as conditions permit. The grease testing equipment is being assembled at present.

The equipment and solutions necessary to run complete analyses of water are being prepared so that all future water problems can be handled efficiently. Plans are under way for taking care of the water control at the sanitary water plant whenever that is taken over.

The industrial hygiene work is progressing satisfactorily and equipment should be ready for operations fairly soon.

The two types of apparatus being set up for routine 216-G74 analyses are nearly ready for operation and it will be possible to carry out such analyses on short notice. Continuous indicating methods are being studied as well.

The infra-red gas analyzer, the infra-red spectrometer, and the Littrow spectrograph are nearly ready for final installation. The gas analyzer will be set up first as the demand for the type of analyses done by this machine has the highest priority.

The equipment for use in the standards room is being erected but several important items which are supposedly available have not yet been located. As soon as they are located, actual standardization can begin.

Analysis of G74-716 mixtures for the process group was attempted using the Kellex analyzer. However, the only instrument available covered the wrong range and it was necessary to do a weight analysis which is very slow and not at all satisfactory for control purposes.

The work on the determination of the amount of dirt on cleaned pipe is going ahead smoothly with equipment still in the machine shop.

The tube group has been designing apparatus and getting ready for immediate operation as soon as space is available.

The corrosion group has been looking over some of the problems and considering methods of attack so that answers can be obtained rapidly.

Chemical Laboratory (Cont'd)

Three metallurgists will be available by December 1st to handle any metallurgical problems which may arise.

Work is going ahead on completion of the laboratory and five rooms are now being used.

Approximately 60 new persons are needed right away for operation and the Industrial Relations group is trying to find prospects. Some energy has been spent trying to locate a glassblower but none has been found yet. It is an absolute requirement for satisfactory operation.

The housing situation for non-supervisory personnel in the laboratory is apparently acute. Steps must be taken to remedy this if a staff is to be maintained.

MANUFACTURING OFFICE

Personnel

Employees beginning of week	306
New hires and transfers in	27
Terminations and transfers out	5
Employees end of week	328

Stores and Receiving Departments

The receiving department is now being partitioned to accommodate more platform space as well as reducing the size of the office so that it can be used for the storage of bulk materials.

Alleys between vaults 10 and 11 are being used exclusively for the Electrical storeroom. The laboratory storeroom which formerly occupied a part of this area has now been moved into the alley between vaults 11 and 12 in which bins have been installed and this storeroom is in the process of being formulated. No offices have been erected in any of the above mentioned vault storerooms but arrangements have been made and these offices will be built as soon as the proper approval has been secured. The heating of these areas will be somewhat alleviated as soon as offices have been built. The necessary phones will also be installed at this time.

As mentioned in last week's report, the temporary J. A. Jones structure is being used for the storage of spare parts for the power plant area inasmuch as no other space is available.

Transfer of spare parts from J. A. Jones for machinery and equipment which were ordered by Kellex has not taken place as yet due to the fact that before this can be accomplished, it is necessary that J. A. Jones be supplied with a complete list of order sheet numbers, purchase order numbers, and vendors involving all spare parts.

Payroll and Timekeeping Departments

Weekly Hourly Payroll - Payrolls submitted for 90% reimbursement through W/E 11-5
Payrolls submitted for 100% reimbursement through W/E 9-28
Weeks ending 10-1 and 10-8 are in Major Moran's office
Week Ending 10-15 is held up for overtime approval

SECRET

MANUFACTURING OFFICE (Cont'd)

Payroll and Timekeeping Departments (Cont'd)

Weekly Salary Payroll - Payrolls submitted for 90% reimbursement through W/E 10-29
Payrolls submitted for 100% reimbursement through W/E 9-10
Weeks ending 9-17, 9-24, 10-1, 10-8, and 10-15 are now in Major Moran's office. As soon as they are received, we will be able to submit them for 100% reimbursement.

Monthly Salary Payroll - Payrolls submitted for 90% reimbursement through month ending 10-31
Payrolls submitted for 100% reimbursement through 6-30-44.

Timekeeping Department

Clocks have been installed in the conditioning area for PC and AN departments, also AS and A3S departments in warehouse No. 1. Ford, Bacon, & Davis alleys near the carpenter shop are being repaired for our use. Departments AA, AN, and A4T will punch clocks there.

Purchasing Department

Room B-218-C was turned over to this department on November 9, 1944, and two phones have been installed.

Requisitions have been placed for 1 buyer, 2 stenographers, and 2 clerks.

Mr. J. N. deRaismes from our New York office is helping the priority division to set up procedures, and Mr. Andres from South Charleston has been loaned for the purpose of setting up expediting procedures.

Moving requisitions received this week	29
Miscellaneous requisitions received this week	181
Total	210
Purchase orders issued this week	185

Accounts Payable Department

Number of invoices passed for payment increased to approximately 390 as compared to approximately 300 during the preceding period. Two employees were added to this department during this period.

Printing, Mail, and Drawing Records Department

A sub-mail room has been set up in the instrument building in the process area. This step was necessary in order to increase the mail service in the area. At the present time two girls are stationed there, making approximately three or four trips inter-office in the process buildings. Mail deliveries to and from the sub-station are increasing and are now running from four to five per day. Generally speaking, this step has increased all inter-area mail to the point of an average of three trips a day and four in many cases. It is understood that two girls can handle the process area mail for the time being, but as offices open in the operating floors, additional messengers will be needed.

Work is progressing in the usual manner in the drawing records section. A new record has been initiated which will enable us to know at all times whether or not our file are up-to-date. Also have added the stores department to our distribution list of Kellex order sheets. This is to expedite information to them in regard to material that is received and consigned to Carbide and Carbon.

MANUFACTURING OFFICE (Cont'd)

At this time we are receiving a great deal of new filing cabinets that are absolutely necessary in our work which again brings up the question of floor space. Ford, Bacon, and Davis blueprints have been turned over to us and this necessitates the additional filing space. We are now reaching the point of crowded conditions in this office.

Traffic Department

Items handled by this department during this period are as follows:

Travel orders	100
Inbound material - carloads	286
Special shipping orders	9
Itineraries	17
Tickets picked up	9
Itineraries checked	10

Property Department

Inventories to end of week:

Power House Area - 95% inventoried, 50% of which has been tagged with USA C&CCC property number

Conditioning Area - Some portable units inventoried. Hooker area being inventoried.

Process Area - Few inventories taken.

As of the end of this week, no transfers of accountability have been made of any equipment, although J. A. Jones informs us that within the next week several transfers will be made in accordance with procedure outlined by Lt. Col. Cornelius September 19, 1944.

Most furniture has been transferred from Ford, Bacon & Davis construction. There are some unfilled requests for items as office tables, typewriters, secretarial desks, and fireproof cabinets. The supply of these items does not fill current needs but the situation has greatly improved this week.

MAINTENANCE DEPARTMENT

The maintenance department personnel on November 12, 1944 showed an increase over the previous week as follows:

	Week Ending 11-5-44	Week Ending 11-12-44	Increase
Manual	828	855	27
Supervisory	67	69	2
Office Personnel	63	64	1
Totals	958	988	30

Status of orders:

Orders all types on hand November 5, 1944	1,180
Orders all types received during the week	1,286
Orders all types completed during the week	1,235
Blanket orders on hand November 12, 1944	695
Orders of other types on hand November 12, 1944	536

MAINTENANCE DEPARTMENT (Cont'd)

Absenteeism from all causes was as follows:

	Days Absent	Hours Absent	Percentage
Garage	58	464	11.9
Process Area	176	1,408	15.2
Misc. Shops	194	1,552	14.3
Conditioning	87	696	12.3
Instrument	72	576	9.0
	587	4,696	12.9

The electrical systems for Cells 1, 2, 7, and 8 in Building K-302-4 have been completely tested by the instrument department. Two cells in Building K-302-4; seven cells in Building K-302-3 and four cells in Building K-303-2 are being tested.

Pneumatic instrumentation testing has not been completed in any one cell in Building K-302-3, due mostly to missing G-74 lines to new block valves and emergency by-pass to seal feed header and to vacuum testing.

The Republic Flow Meter in "B" loop was checked and calibrated. Thirty-eight men are now doing field work.

The four machines at the S-50 Laboratory were operating 50% of the time during the past week. Circuit design changes now under way should raise this operating percentage considerably.

Electrical maintenance is being maintained in all buildings covered by blanket repair orders. Miscellaneous connections of motors and repairs of motors, heating devices, electric trucks, and tools were made during the week.

Considerable work was performed by the machine shop on various items for the laboratory, in addition to daily work of machining dresser couplings, brass baffles for A. C. Pumps in the process area and casing rings for pump impeller shaft. Also installed wearing rings on Pacific Pump from the process area.

Welders were furnished for work at the Carbide steam plant, repair garage, C-616 disposal unit. Work was also performed on seal blanks, Dresser couplings and twenty carriages for C-216 portable cylinder drums.

The welding school was operated as usual on twenty-four hour basis, throughout the week for the purpose of training men on Monel, gas, and arc welding, as well as 6" standard black pipe.

The process maintenance group confined their activities mainly to the following items:

Eleven pumps which were removed from Cell 5, K-303-2, due to burning of bearings when oil was shut off accidentally several days ago, have been installed. When the Pacific coolant pump on Cell No. 9 failed to pump the usual 90-pound pressure, the impeller was removed, and a rag was found would around the shaft just above the impeller. Motor bearings on coolant pump on Cell No. 4 were renewed and a 3/4" drain was installed to the suction line.

General maintenance was provided for vacuum testing group in K-302-3. Two "G" type pumps were converted into "H" type and installed in Cell 2. Twenty-two "G" type pumps were converted into "H" type for Cells 3, 4, 5, and 7.

MAINTENANCE DEPARTMENT (Cont'd)

The repair garage completed repairs on 544 repair and job orders during the week. The repair garage is now maintaining service on 583 pieces of equipment as follows:

Carbide and Carbon Chemicals Corporation	390
Ford, Bacon, and Davis	183
Hooker Chemical Company	6
U.S.E.D.	4
Total	583

INDUSTRIAL RELATIONS

Training

The organization of the supervisory meetings was set up at a meeting held on November 9, 1944. Representatives from each division were appointed to act as divisional coordinators. The first steering committee meeting is to be held on Thursday, November 16. Division meetings in all areas will be held November 20.

The total personnal for the training department is 17. The following figures indicate the attendance of the training classes:

Classes	Total attendance for week	Total attendance to date
Orientation	184	4,532
Foreman-Supervisors	84	2,280
Job Instructor	22	422
First Aid	19	555
Mine Rescue	6	71
Pre-Patrol	66	989
Pre-Process	219	2,138

Safety

Two "lost time" accidents were reported during the week ending November 11. During the same period, 27 accidents were reported which required first aid treatment.

There were two new employees added to the safety department staff.

A preliminary draft of a uniform tagging procedure for electrical circuits was completed and will be discussed with the various operating departments prior to submission to the plant superintendent.

Medical

Treatments	CACCC	Fercleve	Kellex	Hooker	FE&D	USED	Totals
1. Industrial Accidents							
New Cases	39	11					50
Retreatments	65	14					79
2. Industrial Illness							
New Cases							0
Retreatments							0
3. Welfare Accidents							
New Cases	12	3					15
Retreatments	14						14
4. Welfare Illness							
New Cases	153	10					163
Retreatments	79	2					81

INDUSTRIAL RELATIONS (Cont'd)

Medical (Cont'd)

	C&CCC	Parcleve	Kellex	Hooker	FB&D	USED	Totals
Treatments							
5. Other							
New Cases	53	6					59
Retreatments	32	2					34
Complete Examinations							
6. Pre-employment accepted	255	90	5		1		351
7. Pre-employment rejected	1						1
8. Pre-employment reclassified							0
9. Re-hire	5						5
10. Termination	70						70
Partial Examinations							
11. Return to work	8						8
12. Industrial Hygiene							0
13. Goggle Fittings							0
14. Refractions	3						3
15. Other	18		2		8		28
Treated at S-50 First Aid							92

Wage and Salary

To clarify the organization of laboratory personnel, 17 exempt classifications were submitted to the War Department Wage Administration Agency for approval, in addition to the usual routine of approving merit increases, reclassifications, and new hires.

During the period September 25 through October 25, 1944, there were 476 merit increases on the hourly payroll.

Labor Relations

In accordance with the procedure set up for clearing employees who were eligible to vote on Election Day, more than 300 employees were interviewed. Each case was handled individually and the statements made were carefully checked as to residence, length of time in the state, place of voting, etc. Approximately 100 employees were denied time off on the ground that they were ineligible to vote. In each case the employee was advised that he was ineligible and he accepted the decision. Over 200 employees were granted time off, with pay, in order to vote. The time allowed in each case depended upon the place and time of voting, available means of transportation, etc. A report has been submitted listing the names of the employees and the time allotted.

The proposed grievance procedure was discussed in detail at a conference in Mr. W. J. Hatfield's office. Mr. Hatfield stated that the procedure was a good one and urged its adoption. It is now before Colonel Cook for clearance before formal adoption.

An organization chart of non-manual employees was prepared and submitted to Colonel Cook. This chart indicated the number of non-manual employees in each department, by classification, and an estimate of the increase in each classification at peak production.

During the course of the week, 108 terminations were handled. Of this number, 9 were discharges and 99 were resignations.

[redacted]

Employees Services

The housing situation is more critical than ever. The waiting list is as follows:

20 one-bedroom furnished prefabricated houses
11 " " unfurnished " "
2 E-1 furnished apartments
13 two-bedroom furnished prefabricated houses
3 " " unfurnished " "
1 three-bedroom L house
19 three-bedroom unfurnished prefabricated houses

Besides the permanent type housing which are still available, there are only 6 TDU units in Group II housing, which is the only available space for non-exempt salary employees.

At present there are 55 employees housed in offsite units. No houses are now available in Loudon, Harriman, Lenoir City, Kingston, and Rockwood, and there are only 160 offsite houses for rent in Knoxville (and 247 units for sale).

On November 6, 11 double and 25 single trailers were assigned to Carbide at the new trailer camp in Middletown. Captain Ryan has stated that small assignments are the best he will be able to promise, as trailers are being turned over to his office when construction people move out. It will be impossible to inform the employment department that they can promise trailers to all new applicants as not more than 25 trailers are available at a time.

The dormitory situation has become more critical due to the lack of space and a number of female employees who have recently been hired have expressed their intentions of terminating if the overcrowded conditions are not corrected. The main complaint is lack of closet space, as the girls who are presently occupying the rooms have insufficient space for themselves, and when another girl is assigned to the room clothing space becomes very difficult. All emergency rooms in dormitories are being equipped with cots instead of beds, which is another objectionable feature.

Complaints are still being received from employees that the cafeteria is not up to regular cleanliness standards. It is anticipated that the canteen truck will be put into service during the week of November 13. The canteen at Wheat School is also ready to start operations on November 13.

The total figure on the National War Fund Drive as of November 11, 1944 is $2,176.72. All cards have not yet been returned.

Employment

Employment offices have now been opened in Chattanooga, Nashville, and Atlanta. Arrangements are being made to hire local men to operate employment offices in Birmingham, Memphis, and Cincinnati.

The following figures indicate the activities of the various offices now operating:

[redacted]

INDUSTRIAL RELATIONS (Cont'd)

Employment (Cont'd)

	Elza Gate	Knoxville	Harriman
Interviews	1,064	511	157
Hires	115	100	21
Rejects	894	173	3
Non-acceptances	55	169	133
New York transfers		5	
U.S.E.S. referrals		64	

The reasons for rejects and non-acceptances are as follows:

Not qualified	356	No release	64
No openings	251	Family reasons	45
Physical handicap	24	To decide later	42
Under age	94	Available later	1
Housing	127	Unsatisfactory Army discharge	6
Transportation	31	Undesirable	16
Low wages	101	Refused labor	2
Shift work	67	Former K-A employee	1
Draft status	13		

Personnel

	Average number on payroll	New hires	Terminations
Office	621	32	6
Plant Operation	315	11	2
Plant Maintenance	816	45	33
Laboratory and Research	87	8	1
All others	1,927	134	65
Totals	3,766	230	107

SECURITY

Personnel

	Quota	Terminated
Office of Assistant Superintendent - Security	3	0
Investigation and Verification Office	42	1
Guard Force	633	38
Fire Force	128	3
Total	806	42

A Carbide and Carbon Chemicals Corporation Police Force Manual was issued during the last week to all members of the Guard Force. It consists of a twenty-seven page booklet and is of a size that can be carried in the pocket.

The recommendation has been made that a temporary fence be erected at the north end of the Conditioning Area at a point next to the holding pond. This will separate the property allotted to Ford, Bacon, and Davis from the perimeter fence of K-25 and permit a Carbide patrol of that outer fence.

SECRET

With the completion of the motor patrol road on the east side of the conditioning area and adjacent to perimeter fence, quicker access can now be had to the steam plant.

Discussion was had with some of the personnel of the Office of Operations Officer relative to the enclosure of bus terminal with a fence and posted loading and unloading bus platforms in Administration area.

The guard force was issued a number of summons (citations) by Major Klock commanding the Area Auxiliary Police Force with requests that such summonses be issued for traffic violations.

For better identification of streets and roadways in the power house and S-50 areas, arrangements have been made to name various streets and roads, and signs will be erected to that effect. This is very important for fire and police calls.

In both the police and fire forces, it was necessary to work a number of double shifts on Election Day, November 7th, due to the desire of both guards and firemen to vote.

Guards assigned to duty in plain clothes during this week made eleven arrests, six for possessing liquor, one for intoxication, and four for minor destruction of property. They were either turned over to the area detective division or arraigned before the Army review board.

H. D. Kinsey
General Superintendent

LOW PRIORITY

2483

ChemRisk/Shonka Research Associates, Inc., Document Request Form

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(This section to be completed by subcontractor requesting document)

J. Lamb / 1034A

Requestor *Document Center (is requested to provide the following document)*

Date of request 8/18/95 *Expected receipt of document* 10/20/95

Document number K2-5390 *Date of document* 1/28/45

Title and author (if document is unnumbered)

(This section to be completed by Document Center)

Date request received _____

Date submitted to ADC _____

Date submitted to HSA Coordinator _____

(This section to be completed by HSA Coordinator)

Date submitted to CICO 10-5-95

Date received from CICO 10-6-95

Date submitted to ChemRisk/Shonka and DOE 10-16-95

(This section to be completed by ChemRisk/Shonka Research Associates, Inc.)

Date document received _____

Signature _____

UNCLASSIFIED

WEEKLY OPERATING REPORT

WEEK ENDING JANUARY 28, 1945

UNCLASSIFIED

CARBIDE AND CARBON CHEMICALS CORPORATION
OAK RIDGE, TENNESSEE PLANT NGX

~~SECRET~~

UNCLASSIFIED

Carbide and Carbon Chemicals Corporation
Oak Ridge, Tennessee Plant X-10

Document Vault
Serial No.
027A (2)

REPORT NO.
KZ 5390

KZ 5390 2 A

POWER HOUSE

Gross Electrical Generation — 6,115,000 kwhr.

Breakdown of electrical generation

Station use	16.1%
To TVA	25.2%
To X-10	6.3%
To S-50	2.3%
To K-25	50.1%

Standby - - Energy from TVA — 0 kwhr.

Steam Generation — 101,165,000 lb.

Breakdown of steam generation

For electrical load	55.7%
To S-50	44.3%

UNCLASSIFIED

Fuel Consumption

Coal		12,995.8 tons
Oil	21,570 gal.	129.4 equiv. tons
Total coal		5,725.8 tons

Classification changed to UNCLASSIFIED (level and category)
Thomas W. Kelley 9/12/95
AEC or AUD signature (first reviewer) Date
14 Sept 95
AUD signature (final reviewer) Date

Fuel Received

Coal	241 cars	13,727.6 tons
Oil		12,500 gal.

Fuel on hand 12:01 a.m. January 29, 1945

Coal	17,342.8 tons
Oil	51,900 gal.

Overall boiler efficiency	86.8%
Overall station efficiency	12.8%
Station efficiency, electrical generation only	23.1%

The main steam header valve maintenance was completed on January 27, and No. 3 boiler was lighted off. At the Army's request Combustion Engineering ceased the work of rewelding the forged return bends on No. 3 economizer January 26, in order that all three boilers might be ready for the scheduled steam demand of S-50. At this time approximately 20% of the return bends had been rewelded. No. 3 boiler was given a hydrostatic test prior to lighting off and a complete inspection was made. Several tube leaks were found. One return bend which had not been rewelded was also found to be leaking. After No. 3 boiler was on the line, S-50 was able to take more steam and began warming additional rac

~~SECRET~~ UNCLASSIFIED

POWER HOUSE (Cont'd)

in accordance with the schedule. On January 27, No. 2 boiler was brought up to pressure for setting safety valves, and all but one of these were successfully set. This one valve opened at the proper pressure, but would not close after pressure was relieved. The first of this boiler were therefore dropped and the faulty safety valve was dismantled and repaired. During the week S-50's average steam demand was 265,000 lb/hr.

On January 27 the gasket in the hot suction line of No. 5 boiler feed pump blew out when flashing occurred in the heat exchangers. Repairs were made and the pump was ready for service in seven hours.

On January 25 No. 2 belt in the coal conveying system was ripped for approximately six feet along the edge by a metal brace from a coal car. The belt was repaired by clamps and was returned to service in three hours.

On January 25 and 26 a representative of the General Electric Company made an inspection of the five G.E. turbines installed here. It was discovered that the high pressure drain piping was incorrectly installed on three of the units (No. 3, 4, and 6). The representative stated that General Electric had discovered through experience by other users that it would be necessary to change the No. 1 bearing on No. 9 and 10 units, and to change the method of lubrication of the motor bearings for the main oil pump on these two units. General Electric will furnish the material and equipment and Carbide will furnish the labor necessary for removal and installation.

PROCESS

54 Stage Operations

The A and B building lines were connected permanently to the plant system, and permanent dry air and G-74 headers were installed. Building lines were leak tested until satisfactory and minor repairs in the building were completed. Cell instruments were calibrated by the Instrument Department. At 9 p.m. January 27, 1945 Cells 4, 5, 6, 8, 9, and 10 were started on cell inverse recycle on G-74.

Engineering Tests

The following tests were made on Cell 3, Building K-303-2X:

CK-38 - A study of the leakage rate from the inverse recycle line into the space between the seats of the metal seated inverse recycle line valve.

CK-101 - The effect on a cell operating on inverse recycle of successively opening control valves 1 to 6 from 50% to 100% open.

CK-102 - The effect on a cell operating on inverse recycle of slowly closing all control valves from 100% open to closed.

CK-103 - A study of the effect on a cell operating on inverse recycle of closing first the A inverse recycle valve and then closing by increments the direct recycle valve.

Case I Operations

Building K-310-2 - All cells in this building are being vacuum tested. The P.G. system on six of the cells is complete. Only one seal feed system is finished to date. It is expected that a mechanical run on Cell 2 will be made on Monday. A test run was made on all the gallery strip heaters, and one damaged heater was repaired. The coolant system is now being tested in preparation for charging with coolant. All but three of the twelve stage pumps which had been removed for mechanicaldefects have now been replaced.

Buildings K-310-1 and K-310-3 - The first mentioned building is ready for the contractor to make his preoperational mechanical run. In Building K-310-3 the run will be made after all the stage pumps have been removed and necessary repairs are made. They will then be reinstalled and the mechanical run will be made. Work on the pumps should start on Monday.

Building K-601 - All P.G. piping in this building is complete with leak testing over 90% finished. Enclosures and insulations are being rushed on the remainder of the P.G. piping. Instrumentation is complete and the Instrument Department will be able to work in this building by the first of the week.

Intersectional Cell K-310-1 - This cell is completely vacuum tested.

Intersectional Cell K-311-1 - This cell is completely vacuum tested.

Building 301-1 - Lube and evacuation headers have been installed on the operating floor, and instruments have been placed in the cell boards.

PROGRESS (Cont'd)

Case I Operations (Cont'd)

Building 302-1 - Construction is about 96% complete. The items remaining to be done are: leak testing of intersectional cell housing and finishing insulation in intersectional cell, and tying-in cell oil headers to individual stage pumps.

Building 302-2 - Cell 1 - Three mechanical runs were made by J. A. Jones on January 23, 1945. 3B and 1A pumps were found rubbing and were uncoupled and other pumps ran 8 hours. Cell 2 - 1B pump was installed on January 23, 1945. Cell 3 - Two mechanical runs were made on January 22, 1945 and two runs on January 23, 1945 by J. A. Jones. 1A and 6A pumps rubbed and were uncoupled. The remaining pumps ran 8 hours. 3B pump rubbed on the first run. The subbase was unbolted and the whole pump was allowed to shift with the pipe strain. It then ran satisfactorily. Cell 4 - Magnetic centers and direction of rotation were checked on the motors on January 22, 1945. 1A pump was removed on January 26, 1945. Cell 5 - Five mechanical runs were made by J. A. Jones on January 23,1945. 5B and 6A pumps rubbed and were uncoupled. The other pumps ran 8 hours. 2B pump was removed on January 26, 1945. Cell 6 - One mechanical run was made by J. A. Jones on January 25, 1945. 1B and 4A pumps rubbed. 1B, 5B, 6B and 6A pumps were removed on January 26. Cell 7 - Four mechanical runs were made by J. A. Jones on January 24. 1B and 4A rubbed and were uncoupled. The other pumps ran about 6 hours. 4A, 5B and 6A pumps were removed on January 26. Cell 8 - One mechanical run was made by J. A. Jones on January 25. 3B pump rubbed. All pumps were removed on January 26. Cell 9 - 1B and 6B pumps were reinstalled on January 25. All pumps except 1B and 6B were removed on January 26. Cell 10 - 1B and 6A pumps were reinstalled on January 25. All pumps except 1B and 6A were removed on January 26.

Building 302-3 - Cell 1 was run on 716 for about 15 minutes. It is now down for repairs on pumps. Cell 2 was charged with 716 and ran for 45 minutes when it had to be shut down for repairs on pumps. Cell 3 has been running on 716 for four days. Cell 4 was charged with 716 after repairs on the pumps were completed, and has been running for two days. Cell 5 ran on 716 for 30 minutes and was shut down when the baffle ring broke on the impeller of 2B pump. Cell 6 was charged with 716 on two different occasions, and both times a shutdown was necessary in order to repair seals. Cells 7 and 9 are shut down for repairs. Cell 8 has been running on 716 for five days. Cell 10 is running on 716. During the week 15 pumps have been removed, repaired and reinstalled. In addition, the seals were repaired on six pumps.

Building 302-4 - No. 7 coolant cooler has been repaired and installed. All cells except No. 8 are in the hands of vacuum testing. This cell is now undergoing seal replacement. Lube system electrical controls have been checked. Repairs of leaks in the lube fittings at stage pumps are now being made. 8B pumps and seals are complete. Instruments have been tested on the operating floor and the cold trap room. Approximately 25% of the work is complete.

Building 302-5 - All coolant systems except #1 and #6 have been washed with wet coolant. Dry coolant has been charged into #8, #9, and #10 systems. Cell 10 was given a second mechanical run for 15 minutes on January 23. A motor bearing became overheated because of the omission of an oil cap. The motor was replaced by the motor from 6B in Cell 9. Cell 10 was started up again on January 25 and was run for 45 minutes. It was shut down when the 3B pump impeller began to rub. This pump was removed and the remaining pumps ran without further trouble for 8 hours on January 26.

V.T.D. has now finished with Cells 1, 3, 4, 5, 7, 8, 9, and 10. These will be given mechanical runs of 24 hours or more on C-74 at the beginning of the next week.

PROGRESS (Cont'd)

Case I Operations (Cont'd)

Building 302-5 (cont'd) - Dry coolant will be in all systems as soon as V.T.D. finishes with Cell 6. V.T.D. is testing in the cold trap and the purge and products rooms. Lagging and tracing of the pipes in these rooms are proceeding.

Section 100 - This section is being pressure and vacuum tested. All sample lines have been installed and the manifold connections for shipping drums are being given a final cleaning before assembly. Mist filters are being installed on the discharges of the Stokes pumps.

Section 300-C - This section was accepted by Carbide on January 22. Action was taken to utilize the storage tanks for storing coolant.

Case II Operations

Building 301-1 - Lube and evacuation headers have been installed on the operating floor. Instruments have been placed in the cell boards.

Buildings 301-2, 3, and 4 - Lube and evacuation headers have been installed on the operating floors.

Building 303-1 - Instrument systems are completed for Cells 6, 7, 8, 9, and 10, and 80% complete for Cells 2, 3, 4, and 5. Intersectional cell pipe gallery piping is 90% complete. Cell by-pass pipe gallery housing is 20% complete. 60% of the P.G. building by-pass heaters and all of the cell by-pass heaters have been installed. None of the cell enclosures have been tested for tightness. All A.C. pumps, heaters, converters, coolant connections, and instrument piping have been installed. Water and coolant lines at coolant coolers are 30% complete. The cold trap room is about 10% complete.

Building 303-3 - All of the building and cell by-pass piping and evacuation lines have been installed and the pipe enclosures are 50% complete. All sample lines to line recorders have been installed. Seven cell enclosures have passed the preliminary leak test with 1-1/2" of water pressure. All A.C. pumps, heaters, converters, coolant connections and instrument piping have been installed. The cell instrumentation testing is 70% complete. The cold trap room is about 20% complete, and the ventilating system about 70% complete. The building board is 70% complete.

Building 303-4 - This building is about 85% complete. The building by-pass system is ready for pressure testing and vacuum leak testing. Instrumentation tests are now being run in Cells 6 and 8. The coolant equipment and piping have been listed as complete by J. A. Jones. P.G. cell piping is complete, as are the dry and plant air systems. The lube oil system is 90% complete. All pumps, motors and converters have been connected into the system. The cold trap room is about 5% complete.

Building 303-5 - This building is about 75% complete. The P.G. building by-pass system is ready for pressure testing and vacuum leak testing. Cell instrument piping is about 90% complete. The coolant equipment is complete, but the installation and piping are not. P.G. cell piping is about 85% complete, and the cold trap room about 5%. The lube oil system is complete. There are three converters missing in Cell 7.

PROCESS (Cont'd)

Case II Operations (Cont'd)

Building 303-6 - This building has some converters in position but not connected. The balance of the building is about 60% complete.

Buildings 303-7, 8, and 9 - These buildings have A.C. pumps but no converters. The balance of the buildings, in each case, is about 40% complete.

Building K-311-1 - Construction in this building is now waiting to some extent on installation of converters, which are No. 3 size. Delivery is expected in about ten days. The cell by-pass lines are complete and the Vacuum Testing Department is preparing to test the system.

Vacuum Testing

Vacuum testing has been completed in all cells in K-302-3, and all cells have been turned over to operations.

All cells except 6,in K-302-5, have been brought within leak rate specifications. However, all cells have defective pumps, Venturi flowmeters, or valves which must be replaced before testing can be completed.

Testing is proceeding in all cells of K-310-2. All cells except 3 and 7 are under test in K-302-4.

The 311-1 building by-pass and the 311-1.1 intersectional cell have been brought within leak rate specifications. One replaced valve must be tested before testing is complete.

The cold traps in K-302-3, K-302-5, and K-310-2 have been tested and brought within leak rate specifications after design changes were completed. The cold traps in K-302-4 and K-310-1 are under test and are 70% and 30% complete respectively. The purge and product handling system in K-302-5 is under test and is 18% complete. The sample lines in K-302-2 and K-310-2 have been brought within specifications. The P.G. system in the K-302-1.1 intersectional cell has been brought within specifications, but the seal feed system has not been tested. The K-310-1.2 intersectional cell has been brought within leak rate specifications.

Sub-section VII of Section 100 has just been placed under test. Some testing of replaced pumps has been done during the week in K-302-3.

C-616 Mobile Units

Fabrication and charging of one unit is complete with the exception of a C-616 detector tube which will be installed when design details are made available by Miller. The unit is in stand-by condition at Cell 10 in Building 302-3.

PROCESS (Cont'd)

Utilities and Services

Water Circulating Plant - Operations were normal throughout the week. The status of the gasoline engine driven fire pump is unchanged. One of the recirculating pumps was dismantled for inspection purposes, and it was found that the shaft was not assembled properly. Calgon feed was decreased to 2 ppm. Downspouts are being installed in order to curtail backfill and building settling.

The Safety Department inspected this section on Friday, January 26. Recommendations relative to certain desirable changes are being made.

The average daily production was as follows:

Make-up water	1,416,935 G.P.D.	984 G.P.M.
A-Loop	21,273,624 "	14,775 "
B-Loop	No service	No service
Fire water	317,429 "	220 G.P.M.

It should be noted that all services have increased to some extent.

Sanitary Water Plant - Check was made for a 24 hour period as to the usage in the Power House and Fireleve area on January 23 and 24. It was found that the average was 485 G.P.M., or approximately 23% of design capacity for the plant.

The personnel requirements for this plant are complete.

Comstock & Wescott has installed the permanent pump house control cable and is now installing the under-water lighting in the sedimentation basins. Completion of this job will be delayed until such time as the basins can be drained. A stand-by booster pump has been installed in the Post Chlorinator Station to insure a constant feed of chlorine to the water in the distribution system. Work has been started in connection with the installation of meters in the distribution lines supplying the Administration Area and the Process Area.

The Safety Department made an inspection of this facility on Friday, January 26, and will recommend certain changes and improvements to be made.

The average daily production for the week was as follows:

Plant Production	Average Volume	
Flow to storage reservoir	2,593,800 G.P.D.	1,801 G.P.M.
Flow to distribution	2,593,800 "	1,801 "
Storage	No change	
Volume in storage	2,985,000 Gals.	

Plant Production	Day	Volume
(max.)	Thursday	3,146,650 gals.
(min.)	Sunday	2,407,380 "
Distribution Usage		
(max.)	Tuesday	2,952,550 "
(min.)	Sunday	2,083,790 "

PROCESS (Cont'd)

Utilities and Services (Cont'd)

Sewage Disposal Plant - The Army and J. A. Jones have assigned one man to design extra filter beds, sludge pumps and other desirable equipment for this department.

Section 1100 - This section operated normally throughout the week, and there has been continuous improvement in connection with DP readings. Numerous instruments have been put into operation which have facilitated operation and control.

The ammonia system has been dried out and the brine recirculating system has been flushed. A final check of the ammonia system before charging it indicated a number of leaks which are being repaired. The status of the Frick compressors is the same as last week.

Section 1200 - This section operated normally throughout the week.

CONDITIONING

The Preparation Area employees (approximately 700) were transferred from Ford, Bacon & Davis to Carbide payroll on January 22, 1945. Other groups of employees will be transferred as scheduled. Vacuum pump shop and electronics employees will be transferred January 29, 1945 and processing of Conditioning area employees will begin on the same date.

The major portion of the operations in the department consisted of processing Ni plate for Case IV. Some equipment (steel feed drums) was prepared for Fercleve. Monel pipe returned from the process area was reclaimed.

Leak testing

Total leak detectors on hand	142
Total leak detectors in use	125
Total leak detectors under repair	2
Total spares	15

Leak testing of 1/4" to 2" crane valves remains one of the major operations in this department. Rejections of welded pipe, fabricated outside the area, have become smaller, but are still running around 10 to 15%.

AC Blower Conditioning

Blowers received	208 during week	5,748 total to date
Blowers conditioned and delivered	356 " "	3,570 " " "

Tests were continued on a blower equipped with carbon seals. The blower was operated for about two days with approximately 10% concentration of C-216. At the end of this period the blower was removed from the conditioning stand and the seals were taken out for inspection. The carbon ring on the inner seals was somewhat beveled over at the inner edge. Leakage was not affected on this account. The outer seal ring was not affected in any way. Pyrometer leads have been secured to the disk at the carbon ring. The next test will show the effect of temperature on the seals.

Converter Conditioning

Converters received	96 during week	748 total to date
Converters conditioned and delivered	76 " "	632 " " "

Scatter in deviation of final ac/A values from Chrysler values appeared to be reduced by about 50% on stand A16 when the orifice Δ p range was changed to 6" water (from 18" water). Although this was based on six measurements only, it was considered sufficiently encouraging to warrant changing all stands in the same way. The instruments on 19 stands have been converted and the remainder will be converted immediately.

Certification of furnace stands has been completed. The calibration factors are as listed in the report of last week.

There has been an apparent increase in large discrepancies between initial high flow γ and ac/A values and corresponding Chrysler figures. Some discrepancies are confirmed on subsequent tests and others disappear. Further, on any stand the units with large deflations are usually sandwiched between others behaving normally. Runs in which these discrepancies appear are being stopped to permit on-the-spot examinations in the hope that the source of the difficulty will be uncovered.

CONDITIONING (Cont'd)

Running Test Stands

Stands F-3, F-4, and F-5 were operated this week. Five converters were tested this week, making a total of 58 to date. None of the stands are as yet in good operating condition. Changes are being made in instrumentation and gas analyzers. Difficulty was experienced with the automatic control of the refrigerating system.

Acceptance Division

93 furnace runs were considered during the past week. Of these runs, 61 units proved acceptable, 24 retests were requested, 6 units were scheduled for running test stand, and 2 units were held for shipment to Chrysler at Kellex request.

On January 26, 1945 18 units that had been retested were reviewed with two Kellex men in an effort to clarify certain questions as to the specifications and also inorder to cut down the number of retests as much as possible. It was pointed out in the conference that present specifications are not as wide as the scatter in the control measurements. It was also pointed out that considerable retesting was being done to verify cases where the leak flow measurements of ac/A had increased by a factor of .3 over the Chrysler measurements. The answer furnished by Kellex to these questions was that a statistical study was being made of conditioning data with a view to making slight changes in the specifications. Reason given for retesting units with high ac/A values (but not off test according to specifications) was to furnish the continual check source of data concerning damage due to shipment.

C-216 Operations

435 pounds of C-216 were produced during the week, with three generators operating at a total load of 2,000 amperes. Of this amount 320 pounds were used by the Conditioning Building, 105 pounds were pressured into seven portable cylinders, and 10 pounds were put into storage inventory.

G-74 Operations

The total consumption of L-28 during the week was 53,883 gallons, 36,816 gallons were supplied to the process area and 7,112 gallons were supplied to the conditioning area as G-74. Consumption in the process area dropped 28,561 gallons as compared with the previous week. This was due to the fact that on January 26, 1945 at 2:00 p.m. dry air was substituted for G-74 in Case II construction. It is expected that the use of dry air will result in average G-74 savings of 40,000 gallons per week.

Steam Heating Plant

Section 1509 - This section operated normally throughout the week except on January 27, when two sprockets in the scraper conveyor system were broken. General operation of the plant was not curtailed and emergency repairs were made. An inspection showed that there had been cracks in the sprockets for some time.

Production for the week was as follows:

CONDITIONING (Cont'd)

Steam Heating Plant (Cont'd)

Steam Produced - M lbs.	Week	Month January 1945
#1 boiler	4,754	17,234
#2 boiler	5,617	20,247
#3 boiler	5,281	19,630
Total	15,652	57,111
Coal used - tons	869.6	3,172.8
Coal received - tons	654.9	3,371.
Coal stock - tons	6,736.	
Raw water used - M lbs.	6,754	23,108
Condensate used - M lbs.	4,915	17,942

LABORATORY

Chemistry Laboratory

Process Control - The number of analyses required of this group is constantly increasing as various phases of process go into operation. The specification equipment for fluoro-carbons is in full operation except for the equipment for testing inertness. Some samples are being run for inertness, however, and progress is being made toward bringing this to full scale operation. The freezing point determination for HF content of 816 is now on a current basis. The infra-red gas analyzer for determining fluoro-carbons in 816 is now in operation, and the backlog of samples is being run through. Analytical control in the 216 plant (1300 Section) has begun, and operators are being trained for this job. Several operators have been trained in the field analyses of 216 for flash conditioning. The analyses of G74-716 mixtures and dew point determinations are being transferred to the Process Department. Parts have been ordered to equip the freezing point apparatus for use with thermohms and recording potentiometers in order to release manpower for other work.

Technical Control - Flue analyses made at the steam plant show little improvement in the inefficient burning of coal. Work has started on a complete chemical analysis of the water in Poplar Creek. This should prove interesting in view of the excessive scaling found in the coolant coolers. It is hoped that samples of the hard scale observed on the tubes can be obtained for evaluation.

Analytical Development - Colorimetric methods for small quantities of T are under study to determine their ultimate sensitivity. Apparatus has been set up for rapid accurate fluoride analyses and it is being supplemented by apparatus for rapid T analyses. This equipment will be very useful in dust analyses. The Heyrovsky polarograph has been rechecked and found to be in good operating condition. Complete chemical microscopy equipment is being set up according to the methods of Chamot and Mason. This will be extremely valuable for rapid identification of contaminating materials. Samples of scale from the Lunkenheimer valve that failed were examined qualitatively. The 216 field analysis control solutions were made up and standardized. Work is progressing satisfactorily on methods for 816 in air.

Metallurgy - Studies on the thickness of nickel plate after extended exposure to chromic acid were completed. Study of steel structural members which failed under stress continued. A section of pipe cut from a coolant cooler and showing heavy scaling has been received for investigation. Several pounds of silver solder were made up for the Maintenance Department.

Spectroscopy - The fluoro-carbon gas analyzer now appears to be operating satisfactorily, although the sample cell which was supplied with a cracked window definitely leaks and retards the rate of operation. The infra-red spectrometer is apparently in satisfactory operation and is ready for calibration to determine 714 content of samples of 816 and 716. The Littrow spectrograph is operating satisfactorily and work progressed on calibration plates.

Corrosion - The large thermostat for studying dynamic vapor corrosion has arrived, and this system is being assembled. The thermostat for dynamic liquid corrosion has not yet been completed. A second Lunkenheimer safety valve has been put under test under conditions similar to those of operation and differing from the previous test in that the downstream side of the valve is open to a dry atmosphere only. Copper plating for the Maintenance Department continued.

LABORATORY (Cont'd)

Chemistry Laboratory (Cont'd)

Tubes - The L & N thermal conductivity cells arrived from Keller. Most of the electrical circuit for the thermal conductivity measurements is now lined up. The millivolt pyrometer dew point meter has been calibrated for field use. Although it is heavy, it gives an accurate reading and is quite free from thermal and electrical effects. The effect of change in flow on dew point was studied and showed only a 70°C variation for a tenfold change in flow. By using a capillary to control the flow, the results obtained should be good to 1°C using the standard instrument. Progress was made on the calibration of various surface area systems. Construction of the seven foot gamma tester is well under way. Design continued on the F machine and some construction has been started. The pipe cleanliness measurements were unsatisfactory, and some changes in apparatus must be made.

Routine Analyses -

Dew point measurements	36
G-74 - 716 ratio measurements	14
716 determinations in G-74	3
716 analyses	20
HF determinations in electrolyte	18
716 freezing point measurements	40
Inertness tests on fluoro-carbons	6
716 sample concentrates for determination of 714	8
A.S.T.M. distillations	30
744 viscosity measurements	5
744 vapor pressure measurements	5
Water analyses	27
Caustic solution of analyses	3
Coal analyses	10
Flue gas analyses	6
Grease analyses	5
Grease ash analyses	35
T determinations in air	2
T determinations in G-74	2
T determinations in urine	42

Physical Chemistry Laboratory

Four counters are now in operation and are being used to train operators. Two of these have reached a constant counting level satisfactory for measurements to .2% although they are still operating on unregulated power. Three more amplifiers are being warmed up. Wiring and installation of the electroplating setups are continuing. Work is continuing on the assembling of the F-counting apparatus. The device for raising and lowering the radium-beryllium source between its operating position and its safety position in the lead shield has been installed and is operating.

There are still 15 people being given preliminary training at Wheat School. The other personnel is in the laboratory, either for final training or actually helping with the assembling of apparatus. Arrangements are being made to conduct a rather comprehensive study of radiation hazards at the S-50 plant.

LABORATORY (Cont'd)

Physics Laboratory

Installation of the first mass spectrometer in the large operating room is now well under way, since the canopy hood over this machine was finished this week. The other hoods are expected to be in place by the time manpower is available to begin installation of the second machine. Regulated power is promised for February 1. Meanwhile, an instrument for training and for testing proposed improvements in operating techniques is being set up in the research room. All the parts for the purification apparatus are now ready, except for the Hoke unions which are in transit from New York.

Two calibration samples were prepared for the process line recorders and delivered to the Instrument Department. The laboratory line recorder has not been received and these samples could not be checked. They were supplied without guarantee.

Considerable auxiliary equipment is under construction, including a second sample mixing manifold, a vapor pressure checking apparatus, and a manifold for cleaning and conditioning sample bottles. Manuals are being prepared on the technique of mixing samples and on the sampling procedure.

Laboratory Building Construction

Installation of laboratory furniture in the three remaining rooms in the B building will bring the first floor of this wing to practical completion. The front part of the "C" wing is almost complete, and furniture is being installed in the rear half of this building. The installation of furniture in two rooms in the rear wing of "A" continued. Doors were hung in the front half of "A", and only the placing of the asphalt tile floor remains to complete this part of the building.

The de-ionized water supply was put into operation this week. The switch gear installation has been finished and it is being tested. The motor generator sets and amplidyne regulators for the supply of constant A.C. were being tested. Installation of building services and of wash room equipment went ahead in the basements of "B" and "C", and work continued on the air conditioning supply duct work in the basement of all three buildings.

MANUFACTURING OFFICE

Stores and Receiving Departments

SV Stores - Two additional tiers of bins have been received in this storeroom and all welding fittings from the Ford, Bacon & Davis #1 warehouse will be moved into these bins on Monday, January 29.

S2V Stores - The section of the S-50 building which has been used by Magnesium Asbestos Company is to be turned over to us. All of this space will be utilized to store the asbestos that will be taken over from the above company.

S3V Stores - A temporary building from the Power House area has been moved to the Light Equipment Parts Storeroom. A work order for attaching the two buildings has been approved and the work should be completed next week.

S4V and S5V Stores - Shift work was started in these storerooms on January 26.

Process Area - Space now occupied by the Laboratory Stores between Vaults 11 and 12 must be retained as the bulk storage space allotted for this area is not sufficient. Space between Vaults 3 and 4 now being used as bulk storage is to be used for spare parts storage when needed. Additional space for bulk storage and spare parts storage will soon be necessary.

Maintenance Stores - Part of the bins have been moved into the storeroom and material is being placed in bins as fast as possible.

Guard and Firemen Stores - Clothing for firemen can no longer be stored with guards' clothing due to lack of space. If clothing of both guards and firemen is to be stored together, space approximately 40' x 200' will be required.

Salvage - Scrap materials are accumulating in various parts of the plant and as yet no salvage yard has been set up.

Payroll and Timekeeping Departments

Weekly Hourly Payroll - The great increase in size of this payroll has put a heavy burden on the payroll machines. Interruption due to mechanical failure made it impossible to complete the checks for Thursday evening payoff.

Payrolls submitted for 90% reimbursement through W/E 1-21-45.
Payrolls submitted for 100% reimbursement through W/E 11-26-44.

Weekly Salary Payroll -
Payrolls submitted for 90% reimbursement through W/E 1-21-45.
Payrolls submitted for 100% reimbursement through W/E 12-10-44.

Monthly Salary Payroll -
Payrolls submitted for 90% reimbursement through P/E 1-31-45.
Payrolls submitted for 100% reimbursement through P/E 7-31-44.

MANUFACTURING OFFICE (Cont'd)

Payroll and Timekeeping Departments (Cont'd)

Timekeeping Department - Racks were set up at the Ford, Bacon & Davis clock alleys at the Conditioning Building for approximately 800 employees transferred on January 22, 1945.

Space has been made available to place the Maintenance timekeeping group in the Safety Building.

Printing, Mail and Drawing Records Department

Printing Department - The work of this department is progressing in regular order. The Challenge paper cutter has been installed and is ready for general use. The paper punch on order is due in approximately three weeks.

Stationery and Dispensary Stores - Additional floor space has been obtained in the Receiving warehouse for bulk storage of stationery supplies. Additional floor space for dispensary and stationery stores is urgently needed in the Administration Building.

Addressograph Department - The payroll was completed in regular order. A new addressograph file for distribution of correspondence to all supervisory groups is being completed.

Mail Department - Progress is being made toward better distribution of mail despite inadequate space and heavy turnover of employees.

Drawing Records - This department is operating in regular order.

Property Department

Inventories in all areas are satisfactory. Work is suffering due to inability to hire required personnel.

Balance of Stores Department

6,351 stores issues were received from the storeroom. 5,465 were processed and forwarded for distribution. It is still necessary to hold a large number of issues due to lack of prices on transferred material. 1,902 bin cards were typed and forwarded to the storerooms.

Paymaster's Department

Payoff in all areas was satisfactory, though delay in completion of checks by the Payroll Department prevented payoff to all employees who were eligible for Thursday afternoon payoff. Again delay in receiving hire records resulted in many delays in payoff.

Purchasing Department

The lack of a sufficient number of stenographers and clerk-typists is seriously delaying the work of the department. This type of work is not standard and several weeks are spent in training the new employees. Immediate action should be taken to fill the open requisitions for two clerk-typists 3rd class and three stenographers 1st class.

MANUFACTURING OFFICE (Cont'd)

Purchasing Department (Cont'd)

157 material requisitions were received and 268 purchase orders were mailed during the week.

Traffic Department

Travel orders	160
Inbound material - carloads	272
Special shipping orders	26
Itineraries	6
Tickets picked up	4
Itineraries checked	8

Voucher and Cashier Departments

Permanent vouchers submitted for reimbursement	$514,280.63
Temporary vouchers submitted for audit	681,866.49
Vouchers paid	263,903.19
Disbursements	461,398.74
Balance on hand	299,205.85

Accounts Payable Department

Number of invoices received	492
Number of invoices passed for payment	651
Amount of invoices passed for payment	$102,788.84

MAINTENANCE DEPARTMENT

Status of Orders

Orders all types on hand January 21, 1945	1388
Orders all types received during the week	1928
Orders all types completed during the week	1969
Blanket repair orders on hand January 28, 1945	496
Orders of other types on hand January 28, 1945	851

Absenteeism from all causes was 15.7%.

Instrument Department - Process Instruments

Electrical Group

Building K-302-3 - Some difficulty has been experienced with G. E. receivers in this building. Spare parts have not been received as yet. As a result, repairs must be made to the switches, rheostats, etc., instead of replacing defective parts.

Building K-302-5 - Testing has been resumed in this building, also setting of G. E. transmitters and alarm circuits. Several Mercoid switches have been found defective, and arrangements are being made for their replacement.

Building K-303-2 - This building was shut down one day for miscellaneous service and repairs, after which four days were devoted to zeroing G. E. transmitters and resetting alarm systems. Repairs were made to a number of G. E. receivers. It was quite evident that there were zero shifts on more than one-third of all the G. E. transmitters, and it was interesting to note that the transmitters in Cell 2 which had the Glyptal removed had not suffered shifts.

Building K-310-1 - A great many plugged lines have been found in this building as a result of G. E. flow checks. Further testing has been discontinued until the lines are cleared.

Buildings K-310-2 and K-310-3 - Testing in these buildings has been stopped and the only work being done is that on order of the Vacuum Testing Department for the process building foreman.

Pneumatic Group

Instrumentation testing in Case I has been carried to a point where final completion will be made upon the entrance of the Vacuum Testing Department into the various cells. Such testing by this department as zeroing of PBM Taylor transmitters, pre-operational test and clarity check of piping between transmitter and P.G. piping, can be completed when the vacuum testing crews enter these cells.

Cell servicing equipment in Buildings K-302-3, K-302-4, and K-302-5 were turned over for pneumatic testing on January 22, 1945. Pneumatic testing in the cold traps was completed in Buildings K-302-3 and K-302-5 on January 27, 1945. The instrument air supply header in Building K-302-4 has not been completed, but a temporary air connection is being installed so that testing can begin.

MAINTENANCE DEPARTMENT (Cont'd)

S-50 Laboratory

The operable time of the machines at S-50 for the past week was 35.2%, this on a basis of all machines. Machine "C" was out of service in order that a new type manifold, etc., might be installed. Machine "D" was turned over to the operators on January 19, 1945 after the completion of the installation of new type equipment. Therefore, excluding machine "C" on the basis of four machines, the operable time was 44%. The low operating time of 9% for machine "B" is due to the fact that an experiment is being made to ascertain whether or not a ground glass joint will take the place of glass blowing when placing the top on the spectrometer tube.

Glass Blowing

The glass blowing section during the past week has been engaged in the repair and fabrication of various items for the training section and the laboratories. The mechanical section removed the No. 13 tube rack from the line recorder and replaced it with No. 14 tube rack in Building K-310-1. In Building K-302-3 the Hoke valve and leaks on the manifold were repaired, while in Building K-302-5 the mechanical installation of the tube rack and the checking manifold was completed. This section also completed the transfer system for S-50.

Process Area - Building K-302-3

During the past week two line recorder areas were received from the J. A. Jones Construction Company, and work is progressing satisfactorily toward the operation of the machines. The emission regulator problem has been partially solved by Dr. Nier by a change of operating specifications.

Seal Shop

The following items were completed in the Seal Shop:

20 Impellers pulled	20 Shafts checked for alignment
15 Impellers installed	7 New shafts installed
7 Impellers faced off	1 Shaft removed
6 Impellers balanced and clearances checked	20 Dresser couplings removed
6 Blowout preventers checked	20 Baffles removed
21 Seals removed	6 Baffle rings reamed out
34 New seals installed	3 Pumps dismantled

Process Maintenance Shop

Building K-303-2 - The lubricating pump was removed, new sleeves were installed and repacked with Johns-Manville "Centripac." Flax packing will be tried in these pumps. Coolant cooler heads for Cells 7 and 8 were removed and reinstalled. Four A.C. pumps were removed and reinstalled.

Building K-302-2 - All A.C. pumps were removed and delivered to the Conditioning Building shop.

Building K-302-4 - Five A.C. pumps were installed.

MAINTENANCE DEPARTMENT (Cont'd)

Process Maintenance Shop (Cont'd)

Building K-302-5 - The coolant pumps from Cells 10 and 3 were rebuilt, and the coolant cooler was removed for testing in the Conditioning Building.

Building K-310-2 - Coolant pumps in Cells 5, 6, 7, and 8 were assembled. A.C. pumps will be installed when Vacuum Testing releases them.

Building K-1101 - Oil was found in the cylinder of the oilless compressor. Valves were cleaned.

Building K-1201 - Scrapped main bearings, adjusted crank-pin and cross-heads and repacked low pressure cylinder on No. 3 compressor.

Buildings and Grounds Department

The enclosure of Cafeteria No. 1 porch, monorail extension to Building K-1025A and glove racks and glove turners for glove testing equipment were all completed during the week.

Motor Repair Garage

450 repairs were completed during the week. The total number of cars and heavy equipment which received service was 454.

NDUSTRIAL RELATIONS

mployment

The following figures indicate the activities of the various offices now operating:

	Knoxville	Harriman	Elza Gate	K-25
Interviews	650	125	1400	326
Hires	181	22	283	232
Rejects	194	3	1117	54
Non-acceptances	98	99	454	44
Pending	-	11	-	-

Listed below are various reasons for rejects and non-acceptances:

Not qualified	- 398	Refused shift work	- 132
No openings	- 146	Draft status	- 56
Physical handicap	- 70	No release	- 25
Age	- 191	Family reasons	- 55
Housing	- 14	Undecided	- 11
Transportation	- 48	Not eligible for housing	- 141
Not enough money	- 156	Other	- 11

Safety

Four new employees were added to the staff of the Safety Department during the week and there were no terminations. Seventeen training classes were addressed by a representative from the Safety Department. 575 employees attended these classes.

Safety Bulletin No. S-5, "Operation and Maintenance of North Area (C-216 Generation, Liquification and Storage)", was submitted to the Committee on Special Hazards.

The following injury summary is based on accident reports received by the Statistical Section of the Safety Department for the week ending January 27, 1945:

Department		Minor Injuries	Lost Time Injuries
MR	- Steam Plant	2	0
PK	- C-616 Manufacturing	6	0
AA	- Janitors	1	0
AE	- Instrument Department	6	0
AG	- Guards	1	0
A4J	- Fire Protection	5	0
A5J	- Security	1	0
A8J	- Equipment Test and Inspection	1	0
AM	- Manufacturing Office	1	1
AN	- Maintenance Department (Process)	5	0
A2N	- Maintenance Department (Power House)	1	0
A3S	- Receiving Department	1	0
A4T	- Transportation (Mechanics)	4	0
BL	- Works Laboratory (Process)	1	0
B3L	- Physical Chemistry Laboratory	4	0
B4L	- Physics Laboratory	1	0
		41	1

INDUSTRIAL RELATIONS (Cont'd)

Safety (Cont'd)

Plant Lost Time Injury Frequency Rate	4.7 week ending	6.6 year to date
Plant Lost Time Injury Severity Rate	.122 1-27-45	.095

Training

The total personnel of the Training Department is 26.

The tenth subject in the Divisional Supervisory Meeting Program - "Discipline" - was presented in 24 meetings. The approximate attendance was as follows:

Division	Meetings	Attendance
Industrial Relations	1	10
Plant Protection	1	14
Manufacturing Offices	1	23
Utilities	5	52
Process	6	90
Laboratory	6	52
Equipment Test and Inspection and Maintenance (combined)	4	52

The attendance at the training classes during the week was as follows:

Class	Attendance for Week	Attendance to Date
Orientation	353	4406
Foreman-Supervisors	11	2563
Job Instructor	No sessions	554
First Aid	64	919
Mine Rescue	No sessions	76
Pre-Patrol	52	1602
Pre-Process	572	6298

Wage and Salary

On January 28, 1945 the department moved to new quarters where more space is available for additional personnel which is needed to adequately handle the work.

Labor Relations

The department participated in an investigation of the barracks fire and prepared forms for execution by the men who were housed in the barracks. Most of the forms have been filled in and returned. The men who were on the scene of the fire have been interviewed personally and statements were procured from them.

A report on terminations, covering the periods September, October, November and December, 1944, indicating the job classifications and the departments, together with a letter has been prepared and submitted to the interested parties.

Terminations handled during the week were as follows:

INDUSTRIAL RELATIONS (Cont'd)

Labor Relations (Cont'd)

Resignations	148
Discharges	18
Security rejects	1
Medical discharges	1
Total	168
New hires, who were processed but did not report for work	3

Fifteen grievances were received and twelve were disposed of. The selective service problems of Ford, Bacon & Davis transfers were handled during the week.

Medical Treatments	C&CCC	Fercleve	Kellex	FB&D	USED	Hooker	Totals
1. Industrial Accidents							
New cases	62	20		4			86
Retreatments	74	19		3			96
2. Industrial Illness							
New cases	1						1
Retreatments							
3. Welfare Accidents							
New cases	24		6	4			34
Retreatments	34	2		3			39
4. Welfare Illness							
New cases	311	19	3				333
Retreatments	171	20	3	1			195
5. Other (Vaccines, etc.)							
New cases	31	3		3			37
Retreatments	16						16
Complete Examinations							
6. Pre-employment accepted	608	156	6	114			884
7. Pre-employment rejected	2	2					4
8. Pre-employment reclassified	32						32
9. Re-hire	127	22		1			150
10. Termination							
Partial Examinations							
11. Return to work	59						59
12. Industrial Hygiene	4	5					9
13. Goggles Fitting							
14. Refractions	9						9
15. Other	18	1	1				20
	1583	269	19	133	0	0	2004
Treated at S-50 First Aid	342				Grand Total		2346

INDUSTRIAL RELATIONS (Cont'd)

Employees' Services

Laundry - 15,703 pieces were laundered during the week.

Cafeteria - During the week the cafeteria operation continued about as usual, with some improvement in the preparation of sufficient quantities of desserts. The removal of dishes from the tables was somewhat better. However, the service is still poor and there is little improvement in the cleanliness of the dining room and kitchen.

Plans are being made for the new cafeteria setup. It apparently will be necessary to secure new personnel for all key positions, except possibly the head cashier.

The canteen truck which serves the employees in the process area was not allowed to go into the building during the week. This is satisfactory during good weather, but when the weather is bad a covered place should be available for the truck.

Recreation - Favorable reports concerning the first copy of the Recreation Bulletin have been received.

The Carbide basketball team finished its first half in the City League by taking first place with 11 games won, none lost.

Housing - The waiting list on all types of housing is as follows:

	Furnished	Unfurnished
One-bedroom prefabricated houses	86	47
Two-bedroom prefabricated houses	123	105
Three-bedroom prefabricated houses	-	79
One-bedroom E apartments	3	3
Two-bedroom E apartments	1	-
One-bedroom K apartments	-	1
Two-bedroom K apartments	-	1
One-bedroom N apartments	-	1
Two-bedroom L apartments	-	1
B house	-	1
C house	-	7
D house	-	2
Single trailers	91	-
Double trailers	26	-
Rooms in Dormitory No. 39	4	-

The following shows the total number of employees occupying the trailers and dormitory rooms:

Dormitories -	Men	628
	Women	484
	Guards	50

LABOR RELATIONS (Cont'd)

Employees' Services (Cont'd)

Housing (cont'd) -

		Singles	Doubles
Trailers Occupied -	Middletown Trailer Camp	112	20
	Gamble Valley Trailer Camp	69	12
	Ford, Bacon & Davis Trailer Camp	44 *	-

* Only 41 trailers were allotted but three were overdrawn.

During the last month there have been only five moves from Group II housing, so that the waiting list has only decreased by five.

Insurance - The activities of the department for the week are indicated by the following figures:

Group insurance enrollments	470
Hospital insurance enrollments	449
Visits to employees in hospital	18
Visits by nurse to employees in homes, dormitories, etc.	82
Visits made other than by nurse	28
Welfare interviews	50
New compensation claims	15
New group insurance claims	8
Deaths	1

Personnel

Industrial Relations	Dept. Total	Total 1/31/45	Dept. Trans.	Hires	Term.	Net Gain or Loss	Total 1/28/45	Dept. Total
		78	-1	5	0	4	78	
AD Dispensary		114	0	5	0	5	119	
AL Employment		61	0	6	0	6	67	
AJ Industrial Service		45	0	3	0	3	48	
AEJ Safety		27	0	3	1	2	29	
AGJ Training		11	0	0	0	0	11	
AFJ Laundry		1	0	0	0	0	1	
AHJ Recreation								381
Total	381		-1					
Mechanical Division								
AN Engineering		1	0	0	0	0	1	
AA Buildings & Grounds		189	-2	37	11	24	213	
AK Instrument		209	1	9	2	8	217	
AM Plant Maintenance		869	17	70	29	58	927	
AEM Power Maintenance		69	0	5	3	2	71	
AEJ Equipment Test & Inspection		33	0	1	1	0	33	
AET Transportation		62	1	0	1	0	62	
AMT Garage		109	1	1	2	0	109	
								1653
Total	1541		18					

INDUSTRIAL RELATIONS (Cont'd)

Personnel (Cont'd)

	Dept. Total	Total 1/21/45	Dept. Trans.	Hires	Term.	Net Gain or Loss	Total 1/28/45	Dept. Total
Security Division		900	-15	92	72	4	904	
AG Guards		122	- 1	1	2	-2	120	
AAJ Firemen		56	- 1	6	0	5	61	
ASJ Security Office Identification								
Total	1078		-15					1065
Manufacturing Office Division								
MB Purchasing		40	0	1	0	1	41	
MM Office		325	1	6	3	4	327	
MT Traffic		4	0	0	0	0	4	
MS Stores Receiving		94	-5	3	6	-6	88	
MSS Stores Receiving, Power		7	0	0	0	0	7	
MSS Stores Receiving, Process and Conditioning		38	3	4	1	6	44	
Total	406		1				8	411
Process Division								
PA Air Drying		17	0	0	0	0	17	
PC Conditioning		49	0	753 *	6	747	796	
PF Operators		7	0	0	0	0	7	
PK Operators		1040	1	117	20	98	1138	
PS Steam		18	0	0	1	-1	17	
PW Water		17	0	0	0	0	17	
PT Sanitary Water Treatment		7	0	0	0	0	7	
Total	1155		1					1989

* 748 of these were Ford, Bacon & Davis take-overs.

Laboratory Division								
ML Works Laboratory		72	0	1	2	-1	71	
MPL Physical Chemistry Laboratory		70	0	0	0	0	70	
MPL Physics Laboratory		38	0	0	0	0	38	
Total	180		0					179
Utilities Division								
MP Power Electric		96	0	5	0	5	101	
MP Power Steam		125	-1	3	5	-3	122	
Total	221		-1					223
Superintendents Division								
MA Superintendents Department		34	0	0	0	0	34	
Total	34		0					34
MMK Division								
MMK Out of Town		112	0	0	0	0	112	
Total	112		0					112
Grand Total	5118		0	1157	168	989		6087

Security

At a security meeting on Wednesday, January 24, at which representatives of the Army in the C.E.W. area were present, it was requested that Carbide establish an educational poster campaign on security. With this in mind an effort is being made to obtain talent among Carbide employees who can help in this poster campaign. Department heads are requested to aid in this effort to obtain talent.

The new traffic regulations instigated in the K-25 area after several conferences of safety representatives of Carbide, Jones and U.S.E.D., has somewhat broken down the original plan of confining buses to the so-called bus area. The confusion of traffic going both ways on the two roads running adjacent to each other has caused traffic jams at shift time. The new plan, which is to be temporary, permits traffic north on the east lane and south on the west lane.

A very interesting meeting was held by the representatives of the Equipment Test and Inspection Department and the Fire Department, with a representative of U.S.E.D. Security present, to provide a plan for fire preventive methods and to have suggestions for such prevention emanate from the Equipment Test and Inspection Department while the Fire Department confines itself to the fighting of fires.

One of the change buildings in the Ford, Bacon & Davis area and within 150 feet of the guard headquarters is being taken over for locker space for Carbide guards. This will permit the issuance of more uniforms.

The guard force is to cooperate with the J. A. Jones Safety Department in keeping pedestrian traffic inside the temporary fence on the east side of the Process Building and permit entrance and exit only through the gates nearest the clock alleys assigned to them. Accidents have occurred at several times due to vehicular and pedestrian traffic mingling on that road.

The following are some statistics of the activity of the investigation unit of this department for the week:

Number of employees processed during week	574
Investigation forms mailed out on employees	2490
References received, checked and filed	2097
Police references mailed out on employees	574
Police references received on employees	350
Temporary tags issued to new employees	450
Temporary tags issued for lost and forgotten badges	58
Permanent badges issued to new employees	385

As of midnight January 28 there were 847 employees assigned to the guard department. During the past week this department made 33 arrests.

H. D. Kinsey
General Superintendent